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BI-MONTHLY REPORT

OF

THE AGRICULTURAL DEPARTMENT

FOR

NOVEMBER AND DECEMBER,

1864.

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BI-MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
Washington, December, 1864.

This bi-monthly report is the last of this year. If I may be permitted to compare the reports of this year with those of the last year, by the many and warm approvals they have received, I cannot but believe that they exhibit a marked improvement. Those of the past year were the first issued by the department, and, as in all other new enterprises, much had to be learned of the best way to render them useful. With the aid of future experience, it is expected that the reports of the coming year will be not less marked by improvement.

Hereafter they will be published monthly. This change is called for by many persons upon whose judgments the Commissioner can confidently rely. Experience has shown that, from the very nature of the information imparted by these reports, being either chiefly statistical or based on statistics, they must be prepared within a few days before their publication, and hence there has not been realized that leisure in their preparation which it was thought would be found in the bi-monthly. In making this change it may not be necessary to issue circulars every month to correspondents, but only as frequently as the information regarding the crops may render necessary.

The leading article of this report is designed to show the climatic conditions of our country, which may be regarded as the very basis of American agriculture. It will be seen from it how superior is the quality of some of our leading agricultural productions, bidding defiance, by reason of it, to all competition. The cause of that superiority should be known to all—to the merchant and legislator, as well as to the farmer. Systems of agriculture must be controlled chiefly by climate. It will be seen that Oregon and California have essentially different climates, the influence of which is so marked in their crops of the present year. The climate of the Atlantic States is as different from both these as they are from each other. Products, such as the potato and the smaller cereals, which require a short season to best grow them, do better in the Oregon climate than in any other, whilst those demanding a longer season and greater heat, such as Indian corn, cotton, wool, and the sweet potato, are best adapted to the Atlantic climate. Products such as the grape and the cheaper wools do best in climates like that of California, where both heat and dryness are combined, and where cost of production is low. The knowledge of our climates, and the *causes* making them, is essential to success. How much loss could have been avoided in California, if it had been known that protracted drought is incident to its climate, and how much can hereafter be avoided in western Texas, Kansas, and California, from a recollection of what these States have already suffered.

Whilst the cattle of California have perished by thousands, its sheep have not, and hence all the States just named will find their climate best adapted to wool-growing; and in this adaptation to the growth of every variety of wool our nation has the ability to become the greatest wool-manufacturing country of the earth. As the progress of this manufacture, now rapid, determines the kind of wool needed, the farmer can adapt his operations to this demand, thus securing to both the farmer and manufacturer stability in supply and demand. For the purpose of hastening this stability, I am now in correspondence with all of our woollen manufacturers, and the results of this correspondence will appear in these reports.

But, independent of these local interests in understanding the nature of our American climates, all persons being so absolutely dependent on heat and moisture should have some knowledge of the means established by the Creator for the diffusion of heat and the distribution of moisture. By the aid of the plates in this article, the attentive reader can acquire a general idea of these means. Details have been avoided as much as possible, that our farmers might be rather enticed to, than repelled from, a further knowledge in meteorology.

Another important article is that on the production of field seeds. The best skill of the farm has long been devoted to perfecting breeding animals, and its success exhibits the great good that is accomplished by a strict observance of the laws governing reproduction. The nature of these laws assures us that not less progress would be made by a like skill devoted to the production of field seeds. To preserve them from a deteriorating crossing, and a still more deteriorating want of proper cultivation, would seem to be so obvious a duty of the farmer, that the wonder is how such inattention to the improvement of field seeds is so prevalent. Greater attention has been given to the production of garden seeds, and to flowering plants, and their great variety and excellence clearly point to a like success in field seeds.

The French decimal system of weights and measures has so much commended itself to Great Britain, that it will probably be the received system of that country. Congress has adopted the decimal system of value in its coinage to guard the country against the evils of a mixture of foreign coins with our own. How much more important is it to have a uniform system of weights and measures, when every State is now exercising the power of establishing a system of its own. The article on this subject in this report is timely, and explains the general character of the French system.

The comparison presented by the article on the agricultural statistics of Ohio for 1863, between the mode of estimating the annual amount of our crops, adopted by this department, and that of taking them by township assessors, will commend to a still more favorable consideration the plan of this department.

The rapidity of its returns, its general correctness, and its small cost, cannot but meet with every favor. All local agencies to take a census of the crops, as by township assessors, are seen to be so slow in their operations that the farmers' crops are not only marketed, but consumed, before the amount of the crop can be made known, thus losing the chief purpose of taking such annual census, which is to make it known before they have passed from the farmer's hands. The article shows the greater reliability of the returns of this department. How far local agents could be forced to a more correct return by the enforcement of penalties upon them, and upon the persons refusing to give a statement of their products, is yet to be seen.

In this connection I again urge upon Congress to place at my disposal two thousand copies of that part of the census report which relates to agriculture, for distribution among the regular correspondents of the department. In no better hands could it be placed, and in none so deserving. Their valuable and gratuitous services have demanded from me, in every report, the most favorable recognition. Congress will see the importance of this recommendation, when it is remembered that the abridged census report does not give county returns, but that the volume now being published does.

The statistical tables, although not as important as in the last bi-monthly report, cannot but receive an attentive examination.

ISAAC NEWTON,
Commissioner.

AMERICAN COTTON, WOOL, AND TOBACCO.

The agricultural products, mentioned in the heading of this article, have been greatly affected by the rebellion. The first and third, before this war, were the chief of our exports. The second, heretofore, never attained to that magnitude which its utility deserved, but the rebellion has placed it in a position to assume its just rank in our agricultural productions. As an article of export, in its raw state, it cannot be expected to rank with cotton or tobacco, but exported as cloth and other manufacture, it will ultimately hold a no less important place than cotton.

It it proposed in this article to examine, first, the *extent* and *nature* of the *opposition* which these products will meet from the present efforts of other nations to supply the world, on account of the disturbing influences of the rebellion; and, second, to point out the *causes* which will destroy this opposition as soon as peace and industry once more resume their place in the United States.

1. *The extent and nature of the foreign productions of cotton, wool, and tobacco.*—The extent of the increase of foreign cotton can be seen only through its imports into Great Britain—the chief consumer of cotton in the world. The following table exhibits these imports during the first nine months of 1863 and 1864, and the countries from whence imported:

From—		1863.	1864.
United States	pounds	4,627,728	13,086,416
Bahamas and Bermuda	do	16 945,264	28,397,488
Mexico	do	8,996,960	19,132.624
Brazil	do	19,014,912	28,640,976
Turkey	do	7,280,224	16,878,960
Egypt	do	72,195,200	99,056,496
British East Indies	do	242,497,024	300,175,680
China	do	23,392,992	63,989,184
Other countries	do	16,157,792	26,841,808
Total	do	411,108,096	596,199,632

This exhibits an increase of 45 per cent. The imports from the second and third countries are chiefly of the cotton of the United States, and the nations that have most increased their production are Brazil, Egypt, British East Indies, and China.

The above table shows the imports into Great Britain for nine months only. To approximate to the annual production of the cotton of these nations, let us add *one-fourth* more for the remaining three months, which would raise the imports to Great Britain to 745,249,540 pounds. Let us add to this *one-fourth* more for imports of other nations, and the entire cotton crop of the world, antagonistical to American cotton, would be about 931,561,925 pounds. From this, however, should be deducted about 90,000,000 of pounds, which is probably the amount of cotton of the growth of the United States in the above table and estimates. This would leave about 841,561,925 pounds of foreign cotton *versus* American cotton.

According to the census returns of 1860 the cotton crop of the United States was then 2,079,230,800 pounds, or 1,237,668,875 pounds greater than the exports of all the cotton countries in 1864. The reader will see in these figures how very little of the usual cotton crop of the United States is yet supplied by other countries.

The *nature* of this opposition may be regarded in three aspects: the quality of this foreign cotton, the skill of the labor producing it, and the ability of that labor to maintain its rivalry as a consumer of what England and other nations buying cotton may have to give in exchange for it. A few words only on these points will be given.

The *quality* of foreign cotton is inferior to that of the United States. For this cause it never can supersede ours, nor can it be made of equal quality by improvement in its cultivation or change of its varieties. From this general remark the cotton of Egypt may be excepted, but to what extent cannot yet be determined. Why foreign cotton cannot be grown of equal quality with our own will be shown under the second general division of this article. The London Times concedes that it cannot, and its political hostility to our Union seems to be based on visions of an alliance, offensive and defensive, with the cotton confederacy of the south, thus rendering it dependent on Great Britain, and giving to the latter the control of its cotton production.

Of the skill of the foreign labor engaged in growing foreign cotton nothing more need be said than that it is far behind that of our own country in intelligence, experience, and machinery. Egypt is now importing its implements from Great Britain and the United States.

The great disturbance in the monetary affairs of England and France, forcing, in the first of these nations, the bank-rate of interest to nine per cent., attests the drain of money on these nations for cotton. The labor of the cotton-producing nations will receive not much else but gold and silver; for its civilized wants of houses, of clothing, of food, of social comforts, and educational advantages are of the lowest order. As consumers of manufactures. it is almost infinitely below American labor. Between such a people and English manufacturers there can be no mutual exchange of their respective industry. With all its accumulated wealth, Great Britain cannot sustain an import of its textile material by payment in specie.

Referring to this drain of money, the London Economist, in August last, after showing the heavy increase of the purchase of cotton in 1864, says:

"The rude and new countries likely to demand bullion are Brazil, Egypt, and India. How much may be in bullion, and how much in goods, we do not know, but experience shows that a new trade with semi-barbarous nations always absorbs gold and silver. The precious metals are not only their legal standard of value, but their practical notions of riches. Unless each native in Egypt, or even in India, have yearly an increased hoard of them, he hardly fancies he is getting richer. In such countries, too, the trade in coin is rapidly superseding trade in barter; a great step in commercial civilization for them, but one which makes it necessary for them to draw gold and silver from us."

The same paper of December 3 says: "Many people are surprised at the revival of the export of gold to Alexandria, and of silver to India. But the real ground of surprise is that the revival has not taken place earlier," &c.

"An idea," it says, "prevails in some quarters that our exports to the east have grown to such a magnitude as to counterbalance the largely increased imports of cotton. But the figures of the Board of Trade tables do not countenance such an idea."

It then gives the exports and imports as follows:

EXPORTS.

	1862.	1863.	1864.
To Egypt...........	$8, 196, 260	$14, 838, 540	$23, 390, 415
India	56, 754, 185	65, 109, 745	71, 725, 695
China............	7, 971, 495	8, 859, 365	11, 542, 610
	72, 911, 940	88, 807, 650	106, 658, 720

IMPORTS.

	1862.	1863.	1864.
From Egypt	$43,584,075	$59,228,105	$73,963,175
India	85,479,015	131,859,990	169,359,855
China	42,079,525	45,817,640	41,179,930
	171,142,615	236,905,735	284,502,960
	72,911,940	88,807,650	106,658,720
Balance of trade against Great Britain,	98,230,675	148,098,085	177,844,240

Great Britain *must* buy her cotton from *consuming* nations.

On this point we may here repeat the opinions expressed nearly a year ago in the bi-monthly report for January and February:

"But there is another reason why the United States must become the cotton-producer for the world. Commerce is the interchange of the surplus products of different countries. No extensive or lasting trade can be kept up on any other condition. The United States is the greatest consuming nation in the world, because the condition of its masses is superior to that of any other nation. At present, regardless of the struggle in which we are engaged, it is unwisely too much so. The excess of importations proves this, and the articles imported in excess are not those essential to life, but its dearest luxuries. And if with every patriotic motive to economy we thus recklessly consume, how will it be, and how has it been, in times of peace and high prosperity?

"In exchange for cotton, the United States takes freely of the surplus products of those who buy from us. The nations now supplying Great Britain with cotton do not thus consume, and, as a consequence, it has to purchase it by the exportation of gold. This is the cause that now creates the high rates of interest in France and Great Britain, and the drain of our own gold. The East Indies, Egypt, Brazil, and China are not consumers after our fashion. Nor could they become such merely by possessing the cotton trade, but must advance to our position in civilization, for it is the wants and luxuries of civilization that make consumers."

After these remarks on cotton, it will be unnecessary to dwell on the foreign competition our tobacco and wool have to meet from those of other countries. In the January and February number of this report it was shown that, in the scarcity of American tobacco, the English and other markets had resorted to the "*various cheap growths*" of the continent as substitutes, and that these would drive out the American tobacco, unless sold at the lowest rates for which it could be grown here. The quality, then, of these foreign growths is inferior to our own, but there seems to be less difference between them than between American and foreign cotton.

The production of wool has not yet assumed so great a magnitude as to make the United States a wool-exporting nation. When it was growing about *sixty* million pounds annually, it was consuming an equal amount of foreign wools in the form of foreign manufactured woollen cloths and yarns. Much of these foreign wools is inferior to that grown in the Atlantic States, and the question of the extent these cheaper wools should be admitted into the country is eliciting much investigation. The financial condition of the country is now such that these foreign woollen cloths and yarns cannot so readily compete with our own manufactures, because of the duties that must be laid upon them. Hence it is confidently believed, that there are the most encouraging incentives to a largely increased wool product. Our sheep have increased, in the past three years, from about fifteen to thirty millions, yielding about one hundred million pounds of wool. At this time there is manufactured here about one hundred and fifty million pounds annually, so that our domestic wools may be greatly further increased. Here is a great field now open before the farmer to increase his flocks, and to produce such qualities of wool, by proper breeding, as the manufacturers most need. What their wants are will be shown, from time to time, in these reports.

This increase may go on until our own manufacturers shall not only supply home consumption, but export to foreign countries. American enterprise should successfully compete with that of Great Britian. The exports of woollens of England during the first nine months of 1864 are as follows:

			To United States.
Woollen and worsted yarn	pounds	25, 022, 061	
Woollen cloths, &c.	yards	24, 044, 717	5, 094, 641
Flannels	"	6, 652, 377	
Blankets	"	5, 556, 475	
Blanketing and baizes	"	1, 213, 037	
Carpets, &c.	"	4, 889, 868	1, 507, 594
Carpet rugs, &c.	number	748, 762	193, 236
Worsted stuffs	yards	155, 848, 452	44, 730, 084

The tables do not show how much of woollen yarns, flannels, and blankets were exported to the United States, but they exhibit the fact that there is opened for American enterprise a large field for competition, and in proportion as it is occupied by our manufacturers will be the increased production of American wool. There should, then, be harmony and co-operation between the producers of wool and its consumers.

During the same nine months Great Britain imported wools to the amount of 148,140,746 pounds, of which it received from

British Possessions in South Africa	10, 997, 061 lbs.	$3, 757, 620
British East Indies	10, 548, 339 "	1, 911, 005
Australia	84, 919, 645 "	34, 814, 035
Hanse Towns and other parts of Europe	26, 473, 020 "	7, 638, 460
	132, 938, 065	48, 121, 120

The average value of all is 36½ cents per pound, and of the lowest, from the Indies, 18 cents per pound, gold value.

From this table is seen the extent of the wool importations of Great Britian, and that the average prices are not so low but that the American wool-grower can compete with them. The low-priced India wool finds a rival in California wools, the price of which was, on November 1, for California fall clip 13½ to 16 cents per pound at San Francisco. Of the more valuable kinds there is no country so well adapted to their production as the Atlantic States, for the same cause that gives superiority to our cotton and tobacco is favorable to wool also. That cause we now proceed at some length to point out.

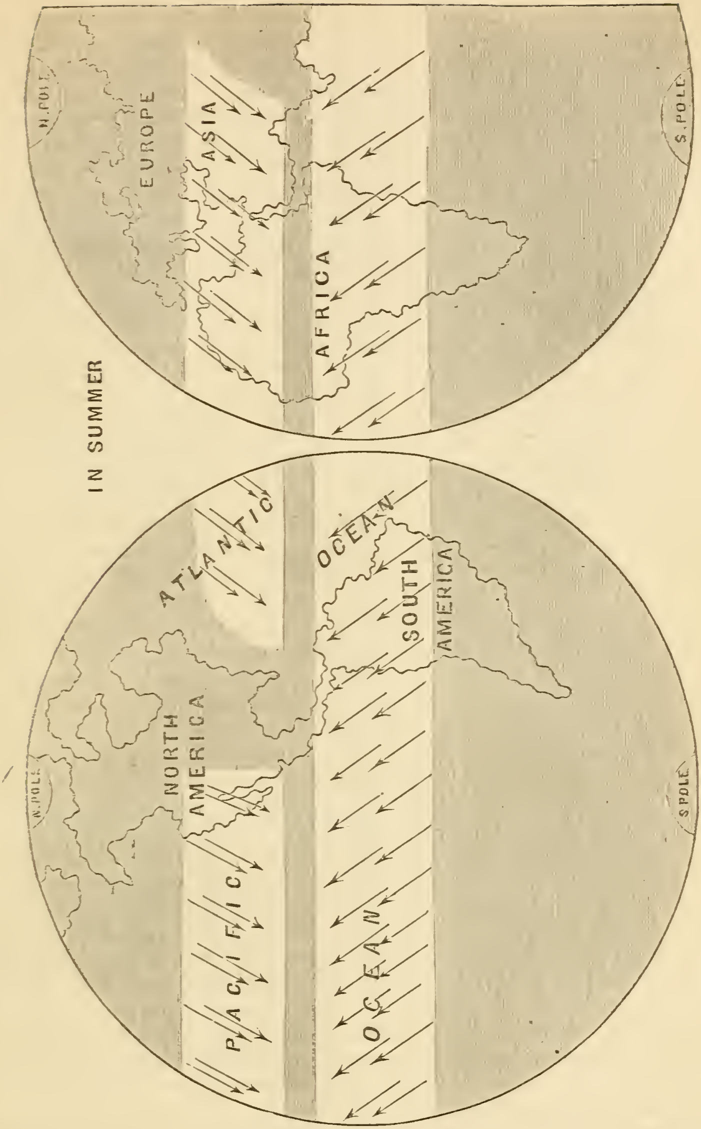
2. *The cause of the superiority of American cotton, tobacco, and wool.*—This will be found in the climate. All of our readers know that the climate of the Atlantic States differs much from that of the Pacific. The one has rain during the whole year, the other during the winter months only. The crops of the one receive showers during their entire growth; those of the other during their winter growth only. The wool of the one is sheared annually; of the other twice, that the growth of the winter may be separated from the short, dry, brittle growth made during the dry season. The San Francisco papers quote spring wool at 20 to 23 cents per pound, and fall wool at from 13 to 18 cents per pound. The climates of South Africa, the East Indies, Australia, and Brazil have their wet and dry seasons, and Egypt is nearly rainless. Here we

see that in their climate the Atlantic States are different from all these. A medium atmosphere, both in its heat and moisture, is the most favorable for the production of cotton, tobacco, and wool. And such is that of the Atlantic States. What is the cause of the difference in the climates of these States and that of California and the countries just named? The answer is interesting to all, but more particularly to those who wish to see clearly the future of our cotton, tobacco, and wool production. The answer requires some consideration of the machinery used in nature to distribute moisture, and we now place it before our readers in such way, that, aided by plates, we hope to convey to them clear perceptions of its character.

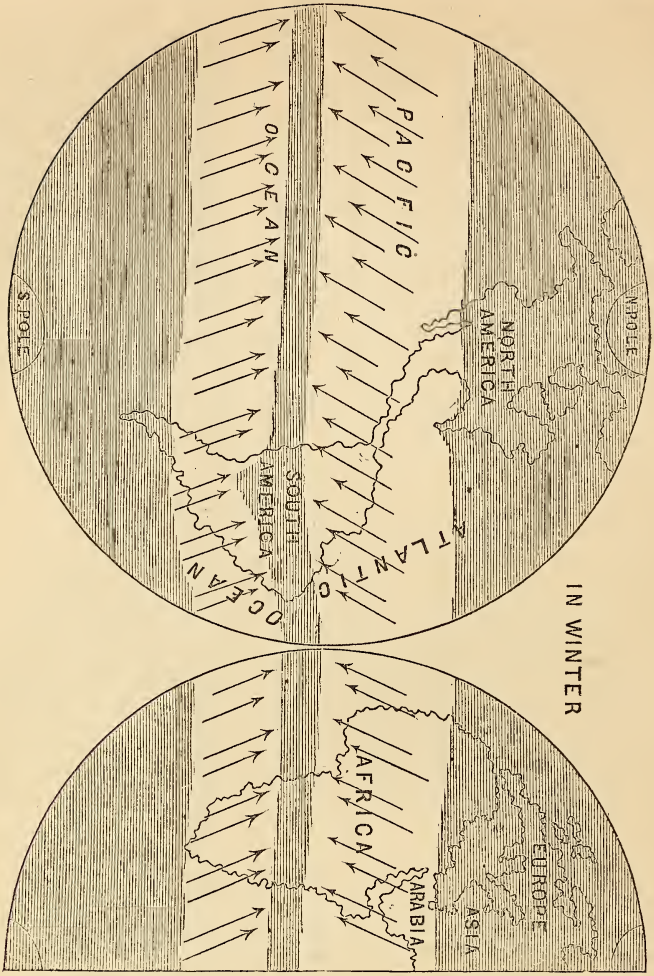
Let us suppose the sun to be directly above the equator, as it is on the 22d days of March and September. There is then this condition of the atmosphere over the world. Nearly under the sun is a belt of calm air, about five hundred miles in width, extending around the earth. On each side of it is a belt of dry air, also encircling the earth; the one north of the equator is about fourteen hundred miles wide, and that south of it from sixteen hundred to two thousand miles in width. The air in the first of these blows steadily and gently from the northeast towards the equator, and the air in the second from the southeast to the equator. North and south of the belts of dry winds, and extending to the poles, there prevail variable winds and showers.

The belt immediately under the sun gives heavy rains, and is called the Belt of Calms, or the Rainy Belt. We shall refer to it by the latter name. The dry belts on either side of it are known as the Trade Winds. It was these which wafted Columbus to the American continent. The atmosphere beyond these and extending to the poles is called the Variable or Extra-tropical belts.

This machinery moves with the sun, and when it has reached its furthest northern point, the tropic of Cancer, at about 23½ degrees of north latitude, and on the 21st day of June, the rainy belt is nearly at that point, and the northern limit of the trade-winds is at the 39th degree of latitude—that is, the latitude of Washington, Cincinnati, Alton, and Independence, and within three degrees of the northern boundary line of California. The following climatic map exhibits the geographical position of these respective belts on the 21st day of June.


IN SUMMER

As the sun recedes, this atmospherical machinery follows it, and when it has reached its further southern limit, the tropic of Capricorn, at 23½ degrees of south latitude, it is as seen in the following map, representing the northern winter and southern summer.



These maps are taken from Butler's Philosophy of the Weather, one of the most practical books on meteorology, and one that should be studied by every farmer desiring to learn the character of that atmosphere which rules the productiveness of the earth.

The arrows in the trade-winds indicate the direction of the wind in them.

Having stated thus briefly the machinery used for the distribution of moisture, we proceed to show its action.

The vast heat of the sun when it is directly overhead causes the atmosphere beneath it to be intensely heated, and by this heat it is vastly expanded; becoming lighter by this expansion, it ascends upward, causing a vacuum, which is filled by the cooler air on each side of this heated and ascending atmosphere. This movement creates other vacuums, which as they are filled causes a general movement of the air from the poles to the equator. This moving of the atmosphere from cooler to more heated surfaces causes it to take up and retain vast quantities of evaporated moisture, and the electrical condition of the air both aids its motion and its capacity to retain this moisture.

Two opinions are advanced as to the course taken by the ascending atmosphere. One maintains that the air passing over the northern hemisphere returns directly back to the north, the other that the meeting columns from the north and south pass through each other in strata, best represented by passing the fingers of one hand through the other. The latter opinion we regard as correct; and if so, then the vast evaporations of the southern hemisphere, which is chiefly water, supply the northern hemisphere, which is principally land, with the rain that falls upon it.

This upper ascending current is called the Upper or Counter trade-winds. In passing through each other these strata produce a calm, which also may be represented by passing the fingers of one hand through the other, the space between the palms of the hand representing this calm, which is the rainy belt first described. The calm produces condensation, and hence the great amount of rain which falls from this belt.

This counter or upper trade in passing to the north goes into a cooler atmosphere, and having lost a portion of its heat, it becomes heavier and its moisture more condensed. At the fifteenth degree of latitude, beyond the rainy belt, it begins to descend to the earth, producing the showers of the extra-tropical belt. The cause of no rain falling in the trade-wind belts is here seen. These winds cannot part with what moisture they have, because they are continually expanding from their increasing heat as they near the equator, and the moisture of the counter trade-wind is not condensed until it arrives at the northern limit of the trade-wind.

To change water into vapor or steam requires nine hundred and seventy degrees of latent heat. This is an enormous quantity, and we see the wonderful provision nature has created for the purpose of absorbing the great heat of the equator. When it has become latent in changing water into vapor, it is insensible to the touch or to any test by the thermometer. When the vapor is carried into higher and more northern places, it parts with this latent heat by being condensed into water. The heat thus liberated warms the surrounding atmosphere, and thus other portions of the vapor are kept from condensing until it passes further north into colder air. Here a portion of it is condensed into rain. Again latent heat is given out to warm this part of the atmosphere. Thus portions of the vapor absorbed at the equator are carried to the poles, and the enormous heat of the equator taken up and distributed to the very poles. No law of nature is more beneficent or more wonderful than that of latent heat when thus performing its office as the chief agent in the distribution of moisture. Thus are the showers of the extra-tropical belt formed. It is these showers that sustain the rivers, and "all the rivers run into the sea, yet the sea is not full," for its evaporations equal the water poured into it by the rivers. "Note the place whence the rivers come ; hither they return again."

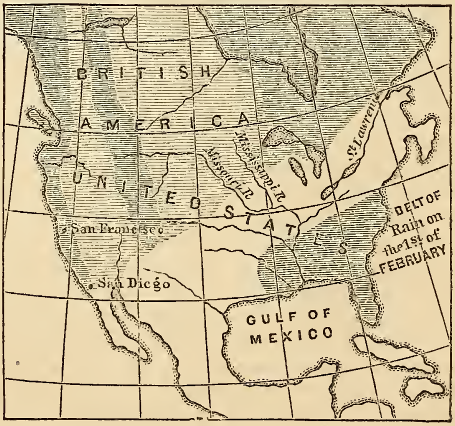
When the upper or counter trade has thus passed from the equator to the poles, it has lost all of the moisture and heat it acquired at the equator. It descends at every place over the extra-tropical region, and passing along the surface of the earth, forms the northwest wind—that cool, dry, and absorbing wind that constitutes the dry winds of the trade-wind belt.

If the earth did not revolve upon its axis, the upper or counter trade would pass from the equator directly north, and when it had descended to the earth, it would return to the equator by a direct south course. But the diurnal revolution of the earth turns the upper or counter trade in an eastern direction, causing it to become the southwest wind in the extra tropical regions, and the returning or trade wind to blow from the northeast.

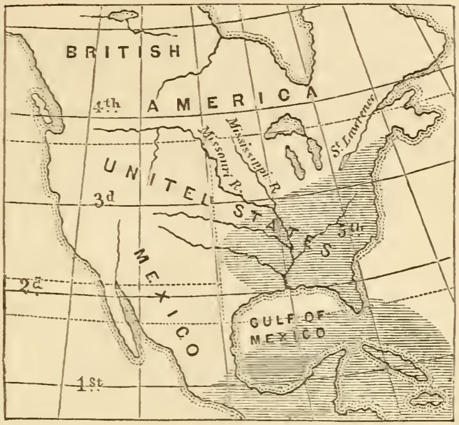
If we follow this machinery in its passage from the tropic of Capricorn to that of Cancer and back, it will be seen that the central or rainy belt furnishes the tropical countries with the heavy rains that fall over them. Our readers are most familiar with them as the rains of Central America. They fall as this machinery is carried northward with the sun, and as it returns to the south. Hence, except at its extreme northern and southern limits, this rainy belt annually passes twice over the same country. As the sun recedes south from the tropic of Cancer the extra tropical-region becomes larger, for it moves south with the sun. When the latter has reached the tropic of Capricorn, the line between the trade-wind belt and the extra-tropical is about the thirty-second degree of latitude. The rainy belt, when it has reached its furthest northern point, extends only to the twenty-eighth degree. Hence no rain ever falls between the twenty-eighth and thirty-second degrees of latitude. These portions of the world, both of north and south latitude, are always dry. The Peruvian guano islands lie in one of them, and hence the vast accumulations of this rich manure, for a few rains would soon cause its decay.

This rainless belt of land commences its eastern limit at the western settlements of Texas, thence passes through the northern half of Chihuahua, Sonora, and Lower California. Mr. Bartlett says of it: "Here shrubs and trees disappear, except the thorny chapparal of the deserts; the watercourses all cease, nor does any stream intervene until the Rio Grande is reached. This great desert region extends over a district embracing sixteen degrees of longitude, or about a thousand miles, and is wholly unfit for agriculture. It is a desolate, barren waste, which can never be rendered useful for man or beast, save for a public highway."

Turning to the first plate, it will be seen that on the eastern part of North America and of Asia, the rainy belt and the extra-tropical region are united. The light-colored belt of the northern trade-wind is in these places darkened, indicating that showers cover them whilst all other parts under the trade-winds are dry. Why is this? The answer, as given by Mr. Butler, is, that the mountains of Central America being higher than the rainy belt, are, by the rotation of the earth eastward, as well as by their greater height, forced against the rainy belt which moves westward, thus acting as a dam against it. There results an accumulation of this aerial belt; and as the mountains run from the southeast to the northwest, the accumulated belt flows towards the northwest, until, mingling with the upper or counter trade, it follows its course, curving round to the northeast. This overflow extends northwards as the sun advances in the same direction. The following map shows the portion of the Atlantic States covered by it about the first of February, reaching nearly as far north as the mouth of the Ohio river.



In April it has extended westward, and its northern line passes near St Louis, and, running in a northeast direction, touches Lake Erie. The following map exhibits its position and extent:



This overflowing rainy belt finds its usual greatest western extension in July through the middle portions of Texas, Kansas and Nebraska Territory, curving east over a part of Lake Superior and the Canadas. Here, then, we find the source of the summer showers which so beneficially aid our agricultural products, especially cotton and tobacco. It makes the United States the great corn-producing country of the world, and gives a moisture and a fresh growth of grass which so beneficially affects the growth and quality of wools. Were it not for this overflow of the rainy belt, the dry trade-winds would cover all of the United States south of the 39th degree of latitude, and thus it would become, as in California and New Mexico, impossible to grow these products, except where they could be irrigated. And having no mountains high enough for their tops to be covered with snow in summer, such irrigation could not be had. The influence which the mountains of Central America exert upon the climate of Great Britain, by turning the Gulf Stream to its shores, has been a theme of much remark in literary discourses, and we see in this exposition of the cause of our great agricultural superiority their beneficent influence upon our climate. Truly, indeed, was the world made by an All-wise Architect!

The attentive reader will have perceived that the northern half of the American continent has *five* distinct climates. The last map exhibits them by the *dotted lines* and *figures.*

The *first* extends from the equator to the middle of Lower California. It is strictly tropical, being watered wholly by the rainy belt. The *second* is a narrow strip, about four degrees in width, and in length from the western settlements of Texas to the Pacific ocean. It is the rainless country, as above described. The *third* reaches from about the 32d degree of latitude to the 39th degree, and extends east and west from the middle of Kansas to the Pacific ocean. It is that portion that is alternately covered by the dry trade-wind and the extra-tropical region of showers, and variable winds. The *fourth* lies north of the 39th degree of latitude and extends from the Atlantic to the Pacific oceans. It is always covered by the extra-tropical showers. The *fifth* is that part of the Atlantic States east of the middle of Kansas, under the overflowing rainy belt. A sixth climate might be added—that which lies on the ocean about three hundred miles from the Atlantic coast, made by the Gulf Stream.

We have thus, at some length, placed before our readers the different climates of our country, and we are certain that in this exposition of the *cause* which must ever make the agriculture of the Atlantic States the greatest in the world, placing its leading products beyond the reach of rivalry, our farmers will give us their cordial approbation, which so often they have bestowed on these reports.

But in this peculiar climate of the Atlantic States they will see also the cause of our successful production of Indian corn, a crop which for 1863, in the loyal States alone, was worth $278,089,609, and which in 1864, in amount, was 530,581,403 bushels. Elsewhere it must be raised by irrigation, for in all other countries having sufficient heat, a dry and wet season prevail. And whilst admiring this climatic blessing, what American but feels still more inflexibly determined that a country so blessed shall never be paralyzed by disunited and warring governments?

THE PRODUCTION OF FIELD SEEDS.

The Department of Agriculture is constantly distributing seeds, and under the action of the Patent Office in past years large numbers have been sent to every portion of the country. But how very few of these have proved a valuable addition. The causes of this failure should be investigated, for they are obvious to all who have given the subject an examination. It is the object of this article to make such investigation, and to prescribe a mode of producing seeds which will not only sustain those common to our country from deterioration, but render useful the new ones distributed by this Department.

1. *The causes of deterioration.*—Climate, soil, and cultivation are the chief agencies in the production of vegetation. The first, regarded as tropical, temperate, and arctic have given plants and forms of vegetation peculiar to themselves. The sugar cane belongs to the tropics, and the potato to the temperate climates; the one flourishes best in the warmest portions of the tropics, the other in the cooler parts of the temperate regions. Advancing from the first locality northwards, the sugar cane gradually deteriorates, and from the second locality southwards, the potato is governed by the same law. At certain points these plants cease to be remunerating crops, and at certain other points they will not grow—no acclimation will cause them to do so. When a plant can barely be made a profitable crop, the seed from it so rapidly degenerates that the crop from it is worthless; but seed brought from a latitude which best suits the plant will there produce a paying crop. These laws of climate cannot be changed.

Soil has similar laws. The sweet potato is grown best in a sandy, dry soil, with a long growing season. The Irish potato delights in a loamy soil, and a short growing season. To a certain extent, plants can be grown in soils not naturally adapted to them, by the ameliorating influences of cultivation.

From this brief statement we see that climate and soil have their conditions, and that cultivation can modify, but not overcome them.

Again, cultivation, especially when given with a strict observance to those laws of vegetable production that govern the improvement of each plant, can advance the plant much beyond its condition, as seen in its natural state and natural climate and soil. The potato is one of the best known instances of the wonderful power of cultivation upon the natural state of a plant.

Here, then, we have three agencies constantly operating on our farm plants, and as these are observed or disregarded will be their advance or deterioration. For instance, the wheats of Great Britain have a long season in which to grow and mature, and a temperature of climate that is mild and regular compared with that of the United States. Its climate is regularly moist, whilst ours is on the extremes of dry and wet. These differences unfit the wheats brought from Great Britain for our climate, unless by cultivation the maturity of the plants is hastened. Last year the Department distributed one of the best English spring wheats, but it would not mature here on account of the shortness of our wheat season. The Chili wheat, when sown here in the fall, cannot endure the freezing of our winter any better than our oats. Now, however excellent such wheats are in the latitudes best adapted to them, yet when brought to a different latitude they must first be acclimated by such cultivation as will, as nearly as possible, make up for the differences of climate. Thus the English spring wheat should have been early sown in a sheltered bed, sufficiently manured to hasten its maturity. The Chili wheat must be protected from severe freezing, or first sown in a southern State, and gradually extended north. But then, the general law is, that when at last it is acclimated, it has lost its superiority, and is no better than the common wheats of the country. But then, again, there are foreign wheats grown in climates more like our own than the English and Chilian wheats mentioned, as the Mediterranean, and such may become valuable to our farmers.

From these remarks it will be seen that a knowledge of the character of the seed is necessary, and that thought and care are essential in its reproduction here. The general complaint of the running out of our wheats points to the fact that our native seeds are so reproduced as to cause their degeneracy instead of their improvement. This can be done in one way only—by a disregard of some or of all of the laws referred to.

The customary manner of procuring seed wheat, and of all other of the small cereals, is to take it from the general crop, and clean it as best can be done by a wind-mill. Such seed contains the best grains grown, many that are imperfect, and the seeds of diseases, as of smut. Such imperfections, joined to ordinary or inferior culture, must result in depreciation. Every stock-grower would admit such result among his stock, if no better plan of selecting his breeding animals was adopted. He, on the contrary, carefully chooses the male and female parents, weighing their perfections and faults, and so adapting one parent to the other, that a like fault in both shall not exist. These animals, from their first of life, have been well fed, cleaned, and housed. Everything essential to their full and complete development has been observed. The laws of descent have been carefully studied. Now the laws governing vegetable propagation are the same as those of animal descent. But the one is almost universally overlooked, whilst the other is admitted and observed. If there is any exception, it is in Indian corn. This has been improved, both in quality and variety, attributable to the fact that, whether a farmer selects his seed corn from the crib, or goes into the field in autumn and chooses the earliest and most perfectly ripened ears, he selects the best, and rejects all of inferior quality. Now a selection of the best is still more important in the small cereals, because from its crowded growth there are many more partially grown grains. But even the best grown, from this crowded state and other causes, presently to be mentioned, are no better than the seed from which they sprung. Hence there is no advance. There are, then, two things to be done—to select the best, and improve that by cultivation.

Every one has heard of the celebrated barrel wheat, grown by a thinking farmer. It acquired so extensive a reputation that his crop was sold for seed alone. Ultimately this variety was found to be produced by selection only. The earlier ripened and larger grains were separated from the rest by gently striking the sheaf across the open head of a barrel. Their weight and earlier maturity loosened them sooner from the enveloping chaff. As these better grains were separated from the inferior, the result was a greater amount of good grains and fewer inferior. It was but an instance of the result of the law that "like begets like"—that law whose observance has produced the Durham, the Virginia racer, the South Down and Spanish Merino, and the Magee hog. Let us but regard its influence as all-powerful in the production of our cereals by a like care in the production of their seeds, and instead of their running out, there will be a running up.

2. *How seeds may be improved.*—Having seen that deterioration arises from want of selection and defective cultivation, we proceed to point to a method by which these evils may be obviated. Cultivation and selection may go together, and, therefore, will be considered together.

The law of progress in vegetable life being the same as in animal life, the *first* step towards improvement is such selection of varieties as is best suited to each person's soil, and to that climate in which he resides. The *second* step is to prepare the soil to grow a good plant, just as the breeder of stock prepaies shelter and food for his breeding animals and their offspring in winter and rich pastures in summer. The *third* one is good cultivation, for by it only can the food of the soil be given to the growing plant. How, then, shall these seeds be so grown in compliance with these essential requisites?

Instead of depending on the general crop for seed, as is now done in wheat, rye, barley, oats, and buckwheat, every farmer should grow his seed separately. The best of his soil should be selected, and made rich with green or barnyard manure, as most required. If it is too cold, or if the seed requires to be hastened in its ripening, it should be warmed and enriched by barnyard manure. If it should be deepened, then clover on which plaster has been sown should be turned under deeply. If the seed about to be sown has been grown in a climate where the season is longer, the time of sowing should be very early, and that it may be thoroughly cultivated, it should be sown in wide drills.

If the seed has been sown in the fall, as the winter varieties are, then the plants should be well hoed in the spring, and as often as is necessary to keep them free of weeds and the soil well pulverized. So much for the mode of *growing* seed. The *selection* may best be made in this way.

When the plants have headed, the crop should be cleaned of cheat, cockle, smut, &c., by cutting out the plants and shoots producing them. All weak stools or sprouts should be cut out also, for these cannot produce perfect grains, but take from the nourishment due to the stronger ones. What would thus be grown would be so perfect as to need no further selection. The threshing should be done separately from other grain, and by the flail.

There is no more reason why our wheats should deteriorate than our Indian corn. Yet the one degenerates whilst the other improves. There can be but one cause for this, and that we have pointed out—improper growing of the seed. It is in the ability of every farmer to correct the evil. But evils, like misfortunes, crowd together, for with these, too, like begets like. The loss by freezing *in* and *out*, noticed in our last report, is aggravated by the weakness of many of the plants, occasioned by the defective seed sown. Every farmer has observed the weakness of the plants of Indian corn, when the seed was small, or has been prematurely taken away by moles or birds. In these cases he could readily see it, but in the smaller cereals he cannot from their crowded condition. But our judgment informs us of the multiplied losses from sowing imperfectly grown seed, and it as clearly points out the necessity of correcting the evil. We have but to overcome a single habit—that of taking our seeds from the general crop. This habit has been of long standing, and has become a second nature. But from the progress now making in our agriculture, we hopefully anticipate its eradication.

Since the above was written we have received a communication from Mr. Haden, of Fayette county, Kentucky, on the subject of smut in wheat. This communication will be given hereafter, when a notice is made of this disease. It led us to read of the disease called "bunt" in England, where greater examination has been given to it than here, and the conclusion of the article on it in the Cyclopædia of Agriculture thus recommends the plan above given by Professor Henslow, in his report on the diseases of wheat, to the Royal Agricultural Society.

"From a variety of considerations, it has always appeared strange to me that practical agriculturists are accustomed to pay so little attention to the raising of pure seed crops. There may be a reason which I do not properly appreciate, that would render it inexpedient to cultivate a seed crop; but I should have thought it was always worth while for every farmer to set aside some portion of ground to be more carefully tended than the rest, for the purpose of securing good and clean seed. Among other reasons for such a practice, he would then be able to weed his crop from every plant infected with bunt or smut, before the fungi ripened."

WEIGHTS AND MEASURES.

During the last session of Congress a standing committee was appointed on weights and measures, and by that act the country was assured that Congress would soon exercise its constitutional authority over this subject. Heretofore we have pointed out the utter perplexity that exists here to determine what the English *quarter* is, and the endless confusion that exists in that nation from every county and commercial city having its own weights and measures.

Before us are some letters from correspondents asking the aid of this Department to correct the evil they experience of buying agricultural products in a State having its own standard in weights and measures, and having to sell them in another State having a different standard. We can aid in this important matter but in one way—by asking Congress to arrest, at the earliest moment, the evil that conflicting State legislation, on this subject, is bringing on the country, and which will increase, until here, as in Great Britain, its very magnitude will serve to perpetuate it.

Mr. R. E. Johnson, of Baltimore, has recently published an interesting article on the question of adopting the French decimal standard. We cannot better serve our correspondents than by its republication, and, in so doing, we add some remarks of our own, suggested by his article.

The *names* given to the weights and measures by the French may appear objectionable to many, because it will be thought they are so unlike the names already given to them. But it must be remembered that the object is to have an *international* system of weights, measures, and values, so that when the price of a commodity is stated in a foreign country, it is known here, because of this uniform system among all commercial nations. We cannot, therefore, expect that our own common names shall be retained. And the French have very wisely adopted names that are not in themselves French, but are derived from the Greek and Latin languages—that common storehouse of names to new things. We have thousands of words, now familiar, drawn from this source. Thus the word *petroleum* is derived from the Greek words, *petra*, a rock, and *elaion*, oil, meaning rock oil. So *anthracite* is from the Greek *anthrakitis* stone coal. A little familiarity with the names given by the French, in their system of weights and measures, will make them as much domesticated as our word dime, which comes from the Latin *decimus*, the tenth.

A particular notice of these names, as given by the French, will not be useless. There are *four* measures—of *length*, of *capacity*, of *weight*, and of *surface*. There must be a *unit* or starting-point for each of these, and this unit must be increased or diminished according to some established number. In our coins we have made this number *ten*. The dime is the tenth of a dollar. Hence it is called the decimal system. The French have adopted this in their system of weights and measures, as we certainly should, that it may be uniform with our coinage. This tenth is natural to our numerals, from one to ten being the basis and these numerals are common to the world.

In the French system, the *unit,* in measures of *length,* is called *meter,* from the Greek word *metron,* a measure. Thus we have our gas-meters, or measurers of the gas which passes from the main pipes to the burners. So we see that the word is already American. This unit is to be decimally increased or decreased. The names showing the *increase,* the French system derives from the Greek, and those showing the *decrease,* from the Latin. *Ten*-fold this meter is called *decameter,* from the Greek word *deka,* ten, and *metron,* measure, as above stated. The *hundred*-fold is called *hectometer,* from the Greek word *hekaton,* a hundred. The *thousand*-fold is called *kilometer,* from the Greek word *kilion,* a thousand.

The *tenth decrease* of this unit, or meter, is named *decimeter,* from the Latin word *decem,* ten. The *hundredth* decrease is called *centimeter,* from the Latin word *centum,* a hundred, as our words per centum, that is, by the hundred. The *thousandth* decrease is named *millimeter,* from the Latin word *mille,* a thousand.

The *unit* of the measure of *capacity* is called by the French *liter,* from the Greek word *litra,* a pound. The ten, hundred, and thousand fold *increase* is named as above—*decaliter, hectoliter,* and *kiloliter.* The *decrease,* in like manner, is called *deciliter, centiliter, millileter.*

The *unit* of the measure of *weight* is called *gram,* from the Greek word *gramma,* a small Grecian weight. Then, as above, we have *decagram, hectogram,* and *kilogram.* Also *decigram, centigram,* and *milligram.*

The *unit* of the measure of *surface* is called *are,* from the Latin *area,* a broad piece of level land. Then, again, as above, we have *decare, hectare,* and *kiliare;* also *deciare, centiare,* and *milliare.*

The *meter* is $39\frac{37}{100}$ inches; the *liter,* $1\frac{3}{4}$ pints; the *gram* $15\frac{43}{100}$ troy grains; and the *are,* 1,076 feet.

We commend this system to the proper committee in Congress, with the hope that it will not permit the present session to pass by without making such report as may be the basis of action for the next Congress.

The following is the article of Mr. Johnson:

THE DECIMAL SYSTEM OF WEIGHTS AND MEASURES.

Great Britain and the United States can secure to the world a universal decimal system of weights and measures of extreme simplicity. Great Britain has taken the first step by legalizing the French system of weights and measures, and this country should aid to the uttermost of her ability in conferring this great boon upon humanity. The subject was introduced in Congress at the last session, but no definite action was taken, and if the attention of public men is not persistently directed to the project, it will be neglected, and even the noble spirits in England who have worked so steadfastly in this cause may become disheartened at their slow progress; for the mere legalization of the system will be futile, unless succeeded by more efficient legislation. The legalizing of the system by us would encourage its advocates in England, and aid them in procuring efficient legislation. It is hoped, however, that our government will not rest satisfied with doing so little.

As much ignorance prevails upon this subject, a slight sketch of the system may not be out of place. The unit of the system is the *meter,* which is the forty millionth part of the meridian of the earth, and is equal to about $39\frac{1}{3}$ inches. From this are derived all the weights and measures, and also the external relations of the coins. Quantities above unity have been named by prefixing Greek numbers, quantities below unity by Latin numbers. The tenfold quantity is indicated by *deka,* the hundred-fold by *hekto,* and the thousand-fold by *kilo,* tenth part by *deci,* the hundredth by *centi,* and the thousandth by *milli.* The unit of superficial measure is 10 meters long by 10 meters wide, or, in other words, is a square *decimeter*, and is called *are.* The *hectare* (100 *ares*) is equal to about $2\frac{1}{4}$ acres.

The measure of capacity is the *liter*, which is the cube of the *decimeter*, or tenth of a meter.

The unit of weight is the *gram*, which is the weight of the volume of water contained in the cube of a *centimeter* when the water is at its greatest density.

The long names of the French system constitute an objection which can be easily avoided. They can be abbreviated so that the units will be of one syllable, and the derivatives of two, and yet bearing sufficient resemblance to the French terms to be easily identified. *Meter*, *liter*, and *are* should be *met*, *lit*, and *ar*. *Deka*, *hekto*, and *kilo* should be *dek*, *hek*, and *kil*. *Deci*, *centi*, and *milli* should be *des*, *cen*, and *mil*. Then *hektometer* (100 meters) would be *hekmet*, *centimeter* ($\frac{1}{100}$ of a meter) would be *cenmet*. *Hectoliter*, (100 liters) would be *heklit*, and *deciliter* ($\frac{1}{10}$ of a liter) would be *declit*. So desirable do I deem this nomenclature, partly for convenience, but chiefly to impress it upon the public mind, that it will be used throughout the rest of this article.

Mr. Fellowes, of Wolverhampton, England, has proposed a nomenclature which would secure short names, but these names would be different in each language, and would be entirely different from the French names. It is very desirable to have the names in all languages so nearly alike, that they can be recognized without hesitation, and the abbreviated nomenclature is the only one which will secure this consideration, together with short names.

As the metric system is entirely decimal, no reduction is required, and there is substantially but one measure of length, the *met*, one of the area, the *ar*, one of capacity or cubic measure, the *let*, and one of weight, the *gram*. It is not necessary to point out the irregularities and inconveniences of our present system. How many of the readers of this article can recite our tables of weights and measures without making several mistakes? How many can tell without calculating how many feet are in a mile, or how many cubic inches in a gallon?

It requires but little study to understand the meaning of the terms *met*, *ar*, *lit*, and *gram;* and but little mental exertion to remember that *dek*, *hek*, *kil*, *des*, *cen*, and *mil* indicate respectively 10, 100, 1,000, $\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{1000}$. When these simple facts are learned the metric system is, for all practical purposes, mastered.

The reader must not suppose that it is necessary to use all these terms. We can call 40 dollars either 4 eagles, 400 dimes, or 40,000 mills, but we seldom use these terms. In France *dekar* and *desar* are seldom or never used, although as correct as *hektar* and *centar*. For all ordinary purposes the following terms would probably be found sufficient: the *met*, *cenmet*, and *kilmet*, (about $\frac{6}{10}$ of a mile,) the *ar* and *hektar*, the *lit* (about $1\frac{3}{4}$ pint,) and *killet* (about 20 gallons,) the *gram* (nearly 16 grains troy,) and *kilgram* (about $2\frac{2}{3}$ lbs. troy.)

Some of the advocates of the metric system have been perplexed by objections urged by advocates of what is loosely called the binary system, but properly called the sexdecimal system. A sexdecimal system of notation would be preferable to the decimal system; but with the latter system exclusively in use throughout the civilized world, it is useless to talk of establishing another, and the adoption of a sexdecimal system of weights and measures, with the present system of notation, would not avoid the necessity of reduction, as the metric system does; besides, it would be commencing anew instead of completing what France has begun. Since 1840 even the names of the old weights and measures have been interdicted in France.

Two anomalies exist in France, which it is hoped will not be introduced into other countries. Apothecaries' weight swerves from the system, and *stere* is sometimes used instead of *killet*. As *stere* and *killet* are each precisely equal to a cubic *met*, the use of the former term mars the simplicity of the system.

The metric system is used not only in France and her colonies, but several other European nations have adopted it. It is legally established throughout Italy, with the exception of Rome and Venice. Two errors have been committed in Europe, which it is hoped will be rectified and never repeated. In one instance a decimal system has been adopted, founded upon the metric system, but not identical with it, and in some instances the names have been, and perhaps still are, entirely unlike the French names. It cannot be too firmly impressed upon the public mind that, in order to reap the full benefit of a universal decimal system, there should be, in effect, but one measure of length, one of area, one of capacity, and but one weight, and that the corresponding names in all languages should be nearly alike.

How can this system be made universal? Every nation should make it the government standard. The *gram* should be the postal weight throughout the world. Legislation should make the metric weights and measures much cheaper than the old ones. Special privileges should be granted to those using the metric system exclusively. It should be made a subject of world-wide concern, and nations should officially inform others of their respective progress in introducing the system. Other nations and States should follow the example of Connecticut, and introduce the system into their schools. Let the steps taken be energetic and efficient, for while men buy and sell by different systems, inconvenience will be experienced; but when the old system is abolished, the inconvenience will cease.

In conclusion, I appeal to the reader not to content himself with a simple assent to the spirit of this article, but to use his influence, be it much or little, towards the success of this cause. Unfortunately, as it appeals neither to the selfishness, the passions, nor the prejudices of men, it can exert no "lobby influence," but must depend for success exclusively upon the enlightenment of the public and the wisdom of our legislators. Let no man be discouraged should the progress of the cause be slow. It may require time and perseverance to overcome the force of habit, and the indifference and prejudice of the narrow-minded; but with untiring exertion on the part of its friends, the project will eventually succeed; and, although its present advocates may not live to see the fruition of their hopes, they can enjoy the consciousness of aiding in conferring upon the world a blessing, the importance of which will be fully appreciated and acknowledged only when the work is completed.

R. E. JOHNSON.

BALTIMORE, *December*, 1864.

AGRICULTURAL STATISTICS.

Ohio Statistics for 1863.

From time to time we have made known the details of the plan by which this Department estimated the amount of the crops and farm stock. It is simple, and does not go into the details of each farmer's annual production, for if it did, it would fail in its very purpose, which is, to estimate the crops before they pass from the hands of the producer. After giving this plan a year's trial, and for years having examined the returns of those States which took them by their township assessors, the declaration was made in one of the reports of the Department that greater reliance was to be given to the estimates of the Department than to most of the returns of the States.

The State of Ohio had, however, given longer and better attention to its State statistics, and to them a greater confidence was given than to those of other States. The annual report of its able Commissioner of Statistics was one of the richest statistical feasts set before the country, for it exhibited the varying and progressive industry of one of the greatest and most advancing States of the Union.

We have had placed before us the returns from Ohio, of its cereal crops for 1863, just one year and two months after our estimates of them had been published. We regard these returns as unreliable, and for the purpose of contrasting the general correctness of the estimates of this Department with them, we have prepared the following tables, showing the returns of Ohio for 1862 and 1863, and the estimates of this department for 1863:

Ohio statistics for 1862 *and* 1863.

		1862. Ohio returns.	1863. Ohio returns.	1863. Dep't estimates.
Wheat	bushels	29, 883, 651	20, 168, 595	28, 742, 963
Rye	do	823, 092	304, 443	863, 232
Barley	do	1, 221, 170	1, 304, 884	1, 399, 086
Buckwheat	do	173, 657	202, 457	827, 364
Corn	do	63, 014, 314	54, 079, 817	57, 433, 802
Oats	do	11, 633, 058	11, 154, 845	12, 024, 028
Tobacco	pounds	*25, 000, 000	36, 918, 793	28, 081, 869
Potatoes	bushels	5, 128, 756	4, 343, 053	4, 103, 005
Hay	tons	2, 073, 398	1, 074, 848	1, 347, 710
Horses	number	727, 245	662, 591	589, 242
Cattle	do	1, 824, 774	1, 369, 593	1, 554, 543
Mules	do	14, 470	14, 238	8, 376
Hogs	do	2, 765, 900	1, 595, 312	2, 320, 664
Sheep	do	4, 448, 227	5, 368, 745	4, 779, 662

Yield per acre.

		1862. Ohio returns.	1863. Ohio returns.	1863. Dep't estimates
Wheat	bushels	$14\frac{1}{4}$	$11\frac{1}{4}$	13
Rye	do	$12\frac{1}{5}$	$9\frac{3}{8}$	14
Barley	do	$20\frac{1}{2}$	18	22
Buckwheat	do	$7\frac{3}{8}$	$7\frac{1}{2}$	11
Corn	do	29	28	24
Oats	do	$20\frac{1}{3}$	20	24
Tobacco	pounds	..	751	757
Potatoes	bushels	$63\frac{1}{4}$	$54\frac{1}{2}$	72
Hay	tons	$1\frac{1}{3}$	1	1

Total acres.

		1862. Ohio returns.	1863. Ohio returns.	1863. Dep't estimates.
Wheat	acres	2, 090, 047	1, 791, 399	2, 210, 997
Rye	do	67, 440	32, 280	61, 659
Barley	do	59, 128	72, 856	63, 594
Buckwheat	do	23, 508	26, 735	75, 215
Corn	do	2, 175, 531	1, 917, 805	2, 393, 075
Oats	do	574, 047	568, 522	501, 001
Tobacco	do	....	49, 168	37, 096
Potatoes	do	81, 060	79, 703	56, 984
Hay	do	1, 571, 765	1, 167, 697	1, 347, 710

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* Estimate of the Commissioners of Statistics.

The first thing that will strike the attentive examiner of these tables is the great difference in the Ohio returns between the years 1862 and 1863. In wheat it is 9,715,056 bushels, and in rye, 518,649 bushels. Here is a loss of one-third in wheat, and over 62 per cent. in rye. What extraordinary casualties caused them? In this Department inquiries of the condition of the crops were made from May to September, every month; and if any such had fallen upon the crops of 1863, the correspondents of fifty-two counties in Ohio would have had some knowledge of them. Of their returns, but three counties returned a very low yield of the wheat crop, and but seven moderately low; whilst twelve were returned above the crop of 1862. The average injury to the wheat crop was 1⅘ tenths. The returns by them of the rye crop exhibit a still more favorable condition.

In the buckwheat crop, it will be seen that the estimates of this Department are much greater than either of the years showing the returns of Ohio. Which is right?

In 1859 the Ohio returns show that there were 149,645 acres of buckwheat in cultivation, yielding 2,222,083 bushels; but this large amount was occasioned by the freezing of wheat in June, and a largely increased acreage in buckwheat was the consequence. But in 1860 the number of acres in buckwheat was 66,827, and the yield 763,930 bushels. How is it possible for so great a falling off as the returns for 1862 and 1863 exhibit? The severe drought in the eastern part of the State in 1862 may account for a small portion of it; but a difference so very great must find other and more general cause.

In tobacco there is an increase as remarkable as the decrease of the products just referred to. Until 1863 the Ohio returns did not embrace this product; but Mr. Mansfield, the commissioner of statistics, estimated the amount at 25,000,000 pounds in 1862. Yet the returns show a product in 1863 of 36,918,793 pounds. The estimates of this Department may have been too low, for want of a proper basis to determine the true value of the returns of its correspondents, and it was a year of remarkable changes in tobacco cultivation. But still we believe that it is nearer the correct amount than the Ohio returns. The number of acres in tobacco is reported to be 49,168; whilst that in buckwheat is but 26,735, and in rye only 32,280. Such statistics, it seems to us, are very extraordinary.

In farm stock there is not the same difference, although apparently there is considerable. The estimates of the Department show the number in January 1864, whilst the returns of the Ohio assessors show perhaps the number in the spring following. During the winter many cattle had been sold for beef, and a large number of shoats and pigs had been lost for want of food to properly winter them and the sows. But sheep had been well taken care of and had yielded their ordinary increase. As to mules, it is probable the Ohio returns are more correct than the estimates of the Department, for the number as shown in the census returns of 1860, being but 6,917 for asses and mules, was doubtless too low, but it had to be accepted as the basis of the estimates of this Department.

This comparison but gives us more confidence in the plan adopted by the Department for estimating the annual agricultural productions. Regarding its rapid action and its very small cost, with its general approximation to correctness, it may justly be regarded as worthy public confidence, and of that encouragement of a regular corps of correspondents, which has often been asked of Congress in these reports.

On the other hand, the comparison will also serve to exhibit the unreliability of State returns made by assessors, who feel no interest in the statistics they gather, because they have not learned to appreciate their value, as have the correspondents of this Department, nor are they compelled to properly discharge their official trusts, by penalties upon them, for neglect, or for failing to return those who refuse to give in the true amount of their annual productions.

CALIFORNIA.

In the last bi-monthly report we exhibited the agricultural losses in California from the drought of last winter. Our correspondent in San Luis Obispo county, one of the southern counties, thus refers to these losses in his county:

"The extreme drought of the past year has caused quite a famine in the southern part of this State—a thing heretofore unknown in California. In fact, meetings and fairs were held in San Francisco for the relief of the people of Santa Barbara county, and were it not for recent mineral discoveries in this county which give employment to the people, who otherwise would be suffering, our condition would be no better. The causes of this destitution are failure of the crops and loss of stock. The number of cattle in this county October 1, 1863, was estimated at 76,850 head, of which four-fifths have since died from starvation, and unless we have early and warm rains very few will live over winter.

"This great loss of cattle will have the effect of compelling *rancheros* to sell their vast ranches, or at least portions of them (for it is a very usual thing to be the owner of from one to thirty leagues of land in this State, exclusively used for stock,) and having changed hands, it will be reasonable to suppose that the agricultural pursuits will receive an impetus. Our land is unexcelled for richness and productiveness, climate unequalled, and being situated immediately on the coast, we have all facilities for exportation to a good market."

This great loss of cattle, if it should result in the breaking up of these large estates, would be a blessing instead of a misfortune. In referring to this dependence on pastures for sustaining the stock, it was urged eighteen months ago by this Department that all the straw of the wheat crop should be saved, with what hay could be made from the wild oats, to sustain the large stock. The experience of western Texas and Kansas, where the eastern limit of the California dry climate is found, suggested this recommendation of saving the straw. Uncertain and long-continued droughts is incident to the dry trade-wind regions, and the farmer should be prepared for them. But this cannot be done until the cultivation of the cereals bears some proportion to the stock pastured, and this can only be by a greater labor. Such labor must be found in the owner of the soil, and to induce such ownership these great estates must be broken up.

Speaking of the coming crop for 1865, our intelligent correspondent from Santa Clara county says:

"Owing to the scarcity and high price of wheat and barley, I do not think two-thirds the number of acres will be sown the coming winter that were under cultivation in the winter of 1862, and probably not as many acres as were sown last winter, so that with a favorable season the grain crop of 1865 must in all probability be small compared with former crops in good seasons. Most of our farmers, owing to the failure of crops the past season, and the disastrous results of the unprecedented drought the past summer, have but little means to farm with the coming winter. Two-thirds of them cannot command capital sufficient to purchase the requisite amount of seed to sow more than half the number of acres usually cultivated by them. There are others (but few, however) who will sow all their lands, and others, having the means, will be induced to put in larger tracts of new land, should we have early rains, believing the price of grain next summer will rule high."

On the same subject, our correspondent from Stanislaus county remarks:

"In this county and section not one-twentieth of a crop was harvested last season, and this season just opened not more than one-third of the ground will be seeded, because the farmers are too poor to purchase seed. One-third of the cattle have perished from want of feed. Sheep and hogs are the only stock doing well. Of the former there are about 100,000 head in the county, producing an average of two and a-half pounds of wool each per annum; their annual increase is between 80 and 90 per cent. Of the latter, (hogs,) about fifteen thousand are fed on mast in the county and in the foot-hills of the adjoining counties. No rain has fallen to date, (November 12,) and another dry season is anticipated by many."

Telegraph accounts of the 30th of November represent that abundant rains were then falling, and on the 14th December heavy floods were apprehended.

In *Tulare* county the wheat and barley crops were less than one-half the customary yield, and but one-half the number of fattening cattle. Fattening hogs were an average. Corn is largely increased by extending irrigation. "No rain yet, adds our correspondent, and all the cattle are driven to the swamps and mountains. A warm early fall rain will save thousands, but if late and cold, our stock will be fearfully thinned."

In *San Diego* and *Merced* counties the wheat, barley, corn, and potato crops were better—about three-fourths of an average crop.

In counties where the soil is loose, early sowing has commenced, if we judge aright from the following, in the San Francisco Mercantile Gazette of November 2. It says:

"We learn from good authority that the farmers in Yolo and Solano counties, who were so unfortunate as not to raise any crops of cereals the past season, have taken time by the forelock, and have been harrowing up their ploughed grounds, which are now like an ash heap, and have already sown thousands of acres of barley and wheat. The whole farming country in the vicinity of Cache creek and Vacaville is already planted in grain."

The deficiency in the crop of this season is supplied by importation. The paper quoted from says it is advised that 7,000 barrels of flour have already been shipped to California from New York; that several cargoes of flour and wheat from Chili are looked for, and that Oregon will not be unmindful of the high prices in California.

OREGON.

Our returns of the crops in this State are principally from its northern counties. They are a full average in some products, and above it in others. Here is the reverse in all those products, cereal and stock, in which the season has been so injurious in California. The cause will be seen from the leading article in this report—the difference in climate. California lies in the dry trade wind belt, but Oregon in the extra-tropical region, where showers fall both summer and winter. There are occasional droughts in it, as in the Atlantic States, but no such prolonged and destructive ones as occasionally occur in the trade wind belts.

Compare the crops of California and of Oregon, and the nature of these climates will be seen. The loss of crops and stock in the one has been set forth under the preceding head of this article; the abundance of the other will be seen in the following extracts from our correspondent in Columbia county, Oregon:

"The average crop of wheat per acre in this county is 30 to 35 bushels; rye per acre, 40 bushels; barley, 40 bushels; oats, 40 bushels; corn, 35 to 40 bushels; the nights are too cold for corn to do well. Tobacco does well. In 1863 was the commencement of its export. I cannot state certainly the amount per acre, but those with whom I have conversed say that 1,600 pounds would be a fair average. Potatoes, 300 to 400 bushels per acre; hay, 3 to 4 tons per acre."

Europe is situated in this extra-tropical climate, and hence there, as in Oregon, there is not a sufficient degree of heat to grow Indian corn profitably.

UTAH.

The returns from this Territory are not as full as usual—the Indian depredations having, we suppose, rendered the mail more irregular. But they present the agriculture of Utah in the same favorable aspect as heretofore presented in these reports. The wheat crop has largely increased; so has the hay crop—keeping pace with the increase of cattle. Hogs, in some of the counties, have decreased. Sorghum, flax, tobacco, &c., are cultivated to a considerable extent, showing that Utah means to depend on its own agricultural resources. Not a single crop referred to in the circulars but seems to be cultivated.

COLORADO.

Our correspondent at Denver writes, that on the 2d of October there were a few snow-flakes on the plains, a heavy storm in the mountains, and that in the night of that day they had the first killing frost. Fall pastures there, as here, are unusually good; but peas and beans were injured by floods, and hay, fodder, turnips, and, in places, wheat, had been injured by the grasshoppers. "They were so numerous," remarks the correspondent, "in Gilpin county, as to eat everything green. The prospects for a large crop of roots and grass were uncommonly fine, but the grasshoppers came in such immense numbers that they appeared like snow-flakes in a heavy storm." But our returns from Colorado are yet too limited to give a general statement of its agricultural condition.

Table showing the amounts and injuries of certain crops of 1864, *stated in tenths.*

STATES.	PEAS.		BEANS.		WINTER APPLES.		GRAPES.		HOPS.		FALL PASTURES.		FALL BUTTER AND CHEESE.		SORGHUM.		CUT-UP CORN AND FODDER.		CLOVER-SEED.	
	Average amount of crop, compared with 1863.	Injury to crop from all causes.	Average amount of crop, compared with 1863.	Injury to crop from all causes.	Average amount of crop, compared with 1863.	Injury to crop from all causes.	Average amount of crop, compared with 1863.	Injury to crop from all causes.	Average amount of crop, compared with 1863.	Injury to crop from all causes.	Average condition of fall pasture, compared with 1863.	Injury from any cause.	Average amount of fall butter, compared with 1863.	Average amount of fall cheese, compared with 1863.	Average amount of molasses per acre, compared with 1863.	Injury from frost in October.	Average am'nt of cut-up corn and fodder, compared with 1863.	Injury from wet or other causes.	Average am'nt of clover-seed, compared with 1863.	Injury to crop from all causes.
Maine	8	$7\frac{3}{7}$	8⅔	$7\frac{7}{10}$	6	6	9⅓	9	8⅔	8⅔	9	7⅓	10	7⅖	......	......	8⅜	7⅔	7	7
N. Hampshire	7¾	7½	10	7	9½	7½	12	8	7	7	9½	8	10	8½	......	......	9⅗	8⅓	6¼	7⅓
Vermont	9	8	9⅓	7¼	10	7¼	10	7½	5	5	9	7	9⅗	8¼	......	......	9	8	8	8½
Massachusetts	8	8	10	8½	8⅜	7	11⅜	8	9⅔	6½	9	8	9⅔	8⅗	......	......	8⅔	8	7	7
Rhode Island	......	....	......	....	2	8	......	....	......	....	12	....	11	11	......	......	......	......	......	......
Connecticut	9	8	10	8	7	7	9⅓	6	9	9	9	8	8	8	12⅔	......	11	9	11	9
New York	8	7¼	8⅓	8	8⅔	7¼	11	8½	8⅔	7½	11	8	10½	10	$9\frac{3}{7}$	7½	10	8⅓	6⅔	6½
New Jersey	8	8	9¼	8¼	12½	8	9⅓	7¼	......	....	9	7⅗	8⅝	6⅓	9	8	11	8⅓	6	6
Pennsylvania	$8\frac{3}{10}$	8	9	7⅖	$12\frac{5}{7}$	7½	9⅜	8	9	8	$13\frac{5}{7}$	7½	11⅓	10	12	8⅕	10⅕	7½	7⅜	7
Maryland	7	7	11⅐	7½	13	8⅓	10	8	8	8	8	8	8	7½	7	8½	9	8	6	6⅓
Delaware	11	9	10½	8	12	7½	10	7	10	9	11½	7	10	......	10½	5	10½	7½	7	6½
Kentucky	......	....	10	....	$4\frac{3}{10}$	4½	5	4⅓	......	....	13	....	11	......	$10\frac{3}{7}$	8	8½	$6\frac{5}{7}$	......	......
Ohio	9	8	10	7¼	13¼	7¼	8	6½	9	8½	$14\frac{7}{9}$	8⅗	12	11	10½	8⅙	12	7⅔	$7\frac{4}{7}$	6⅖
Michigan	8	$7\frac{4}{7}$	9	7	5⅓	5¼	5	4	8	7½	8½	$7\frac{3}{10}$	9	$8\frac{2}{7}$	9	9	12	8	7¾	6⅕
Indiana	9¾	8	10	7	6	6	4	4	8	7¼	$12\frac{2}{7}$	8	10	9⅙	9½	7⅔	11½	8	6¾	6
Illinois	9	8½	$12\frac{7}{10}$	8	7½	6⅓	7	5¾	9	8½	9¾	7	8⅔	8	11½	8½	11⅔	8	9	7¼
Missouri	5⅜	6	7⅔	6¾	5	5⅕	4⅔	3⅗	......	....	8⅕	7	7½	7	11	8½	8½	8	6	8
Wisconsin	10½	$7\frac{4}{9}$	11½	8⅙	6	5½	7½	5⅗	10⅓	8	9	$7\frac{3}{10}$	9⅝	8⅓	13	8½	11½	9	10¼	7½
Iowa	9½	8⅓	10⅔	8	11⅖	$7\frac{6}{10}$	10¼	$7\frac{7}{10}$	10⅐	8	10½	8	10¾	9½	10	$8\frac{2}{7}$	10½	9	11	8⅓
Minnesota	9	8	10⅔	8	......	....	......	....	......	....	9	9½	9⅔	9	11	......	12½	9	......	......
Kansas	9	8	8	6	6	7	9	8	......	1	10⅜	8	9⅓	10¼	6½	7½	10	6	......	......
West Virginia	10	10¼	11	9	15	7	12	9	10	7½	15	8	14	14	14½	9	16	8	10	8
Nebraska Ter'y	......	....	7½	5	......	....	13½	8	......	1	12½	8	11	12½	8	7½	11	9	10	10

Table showing the condition and amount of the fall sown crops, and the weather, for October and November, 1864.

STATES.	WINTER WHEAT.		WINTER RYE.		WINTER BARLEY.		WEATHER.													
							Number of weeks.													
							October.							November.						
	Average amount of winter wheat sown, compared with 1863.	Injury to it from fly or other cause.	Average amount of winter rye sown, compared with 1863.	Injury to it from any cause.	Average amount of winter barley sown, compared with 1863.	Injury to it from any cause.	Favorable.	Wet.	Very wet.	Dry.	Very dry.	Frost.	Snow.	Favorable.	Wet.	Very wet.	Dry.	Very dry.	Frost.	Snow.
Maine	9$\frac{1}{2}$	9$\frac{1}{2}$	10	10	....	....	29	5	....	1	4	1	....	18	15	3	....	....	....	4
New Hampshire	13$\frac{1}{2}$	....	11	10	....	....	19	7	....	4	1	1	....	15	11	....	....	....	....	7
Vermont	11$\frac{1}{2}$	8$\frac{1}{2}$	12	9	....	....	12	11	1	....	....	2	1	10	9	3	1	....	2	7
Massachusetts	9$\frac{1}{3}$	8	11	9	....	....	29	5	....	1	4	1	....	18	15	3	....	....	....	4
Rhode Island	....	....	....	....	....	....	5	3	....	....	....	....	....	5	3	....	....	....	....	....
Connecticut	10$\frac{1}{2}$	....	11	....	....	....	11	2	....	6	....	1	....	3	9	2	....	....	1	3
New York	11$\frac{1}{2}$	8	11$\frac{1}{2}$	8$\frac{1}{2}$	9$\frac{3}{8}$	8	52	66	5	....	5	7	3	32	62	14	1	....	9	28
New Jersey	10$\frac{1}{2}$	6	10	8	....	....	16	3	....	4	....	1	4	11	10	3	1	....	2	1
Pennsylvania	11	8$\frac{1}{2}$	10$\frac{1}{6}$	8$\frac{2}{5}$	9$\frac{1}{3}$	8$\frac{1}{4}$	63	54	8	....	....	7	3	34	72	14	....	....	7	24
Maryland	9$\frac{1}{3}$	8	11	....	....	....	27	2	1	8	1	1	....	25	5	....	8	1	....	1
Delaware	9	8$\frac{1}{2}$	10	9	10	10	2	3	1	1	....	1	....	2	4	....	....	....	2	....
Kentucky	9$\frac{1}{2}$	....	8$\frac{1}{2}$	....	8	....	11	18	4	2	1	1	....	6	16	11	1	....	3	....
Ohio	10	8$\frac{3}{4}$	10$\frac{1}{3}$	9	9$\frac{1}{2}$	9	71	55	9	19	....	14	1	53	72	9	10	....	10	19
Michigan	10	8$\frac{2}{3}$	10$\frac{1}{3}$	5	....	....	38	14	....	2	....	6	2	12	24	7	....	1	4	23
Indiana	11	8$\frac{3}{8}$	10$\frac{1}{2}$	8$\frac{1}{2}$	11$\frac{1}{8}$	8$\frac{1}{5}$	69	23	1	32	....	5	2	48	36	10	10	....	17	12
Illinois	10$\frac{1}{2}$	9$\frac{1}{5}$	10$\frac{1}{6}$	8$\frac{5}{8}$	8$\frac{2}{3}$	9$\frac{1}{4}$	89	22	....	56	1	13	3	51	73	8	19	....	29	11
Missouri	12	7$\frac{1}{2}$	9	8	10$\frac{2}{3}$	9	15	4	1	17	....	5	....	18	5	2	....	....	10	5
Wisconsin	13	8$\frac{7}{10}$	10$\frac{1}{3}$	9$\frac{3}{7}$	9$\frac{1}{2}$	9	44	9	....	22	....	4	1	11	26	5	7	....	13	18
Iowa	9$\frac{2}{3}$	9	10$\frac{1}{2}$	9$\frac{1}{3}$	10	8$\frac{2}{3}$	52	21	3	43	....	10	6	37	26	6	14	1	17	33
Minnesota	8	9	9	9	....	....	3	7	....	32	4	4	2	10	12	1	12	1	7	9
Kansas	12	8	9$\frac{3}{7}$	8	....	....	15	4	9	....	1	3	....	10	8	3	2	....	2	7
West Virginia	9$\frac{5}{7}$	9	12$\frac{1}{2}$	9	14	....	13	8	....	4	....	4	....	10	6	1	3	....	....	5
Nebraska Territory	10	10	15	10	10	10	5	2	....	....	....	1	....	2	....	....	....	....	2	4

COMMENTS ON THE FOREGOING TABLE.

In the last bi-monthly report the principal crops were given; those embraced in the preceding tables are of minor magnitude, although important, nevertheless. As no estimates have heretofore been made of their amount in bushels and pounds, it is now too late to attempt it, but must be deferred until another census is taken.

The reader will remember that 10 represents the crop of the year referred to in the several questions, and that all figures above or below that number are so many tenths, as the figure is above or below 10. Thus, in the crop of peas, Maine is 8, which represents two-tenths, or twenty per cent. below the crop of last year. In Wisconsin it is 10½, meaning a *half* of a tenth above the crop of 1863. We will notice the principal of the crops named in the table:

Peas and beans.—The principal pea producing States are Georgia, Mississippi, and North and South Carolina; and those which grow most beans are the northern States—Maine, New Hampshire, Connecticut, New York, Pennsylvania, Ohio, Michigan, and Illinois. But the census returns do not separate these crops, and hence what part of the returns for each State is peas and what beans cannot be determined.

In Maine the crop of beans is 1⅓ tenth below the crop of last year; in New York, 1⅔ tenth below; in Pennsylvania and Michigan, one-tenth below; in Illinois, 2$\frac{7}{10}$ tenths above; and in New Hampshire, Connecticut, and Ohio, the same as last year's crop. Altogether, the crop is considerably less than last year's.

Hops.—In 1860 the great hop-growing State was New York, which then produced nine and a half millions of pounds out of the eleven millions raised in the United States. But since then hop culture has been much increased in other States.

The crop in New York of 1864 is 1⅓ tenths below that of last year, and it is much inferior, being greatly injured by insects. Vermont is next to New York, and in it there is but half the crop of last year. In New Hampshire it is three-tenths, or 30 per cent. below.

Butter and cheese.—The fall pastures were unusually excellent, and, as a consequence we find the fall production of butter and cheese very favorable. We notice only four of the chief butter and cheese producing States. In New York, butter is a half of a tenth, or five per cent., above the amount made last year; in Pennsylvania it is 1⅓ tenth above. In both of these States cheese is the same as last year. In Ohio, butter is two-tenths above, and cheese one-tenth above; in Illinois, butter is 1⅓ tenths, and cheese two-tenths below last year's production.

Sorghum.—The crop of sorghum molasses is greater than the crop of 1862, the best heretofore produced. In the western States this year's crop was considerably injured, both in amount and quality, by the frost of October 9, but the crop is a satisfactory one. How far it will make sugar yet remains to be seen. But as the production of sugar requires a perfectly matured cane, no general progress in the making of sugar from the sorghum need be looked for this year.

That most excellent paper, the Cincinnati *Sorgo Journal*, thus speaks of the unfavorable nature of the season in the spring and summer, and the effects of the frosts of autumn:

"In almost all sections of the country the spring was unpropitious, and many were, on that account, deterred from planting; others planted, and finding the seed fail to come in due time, replanted with corn. Others replanted cane seed, many as late as the 1st of June, and were obliged to watch the apparently ineffectual struggle of the feeble plants against one of the most protracted and pinching droughts ever experienced in the country. But on the last of July and in the month of August the rains came, and throughout the entire cane-growing belt from the great Salt Lake valley to the shores of the Atlantic, the aspect of the crop was changed; the hopes of the planter were revived, and all ventured to calculate upon a small return for their labor, provided frost did not occur until late in September. From the 1st of August until the night of the 18th of September the weather was most favorable, and many fields of cane matured, though the largest portion of the crop was even then two or three weeks behind, some being only in the flower. At this time the first frost of the season occurred, visiting, so far as we have learned, the whole region of country north of the central line of the States of Ohio, Indiana, and Illinois, extending somewhat below the line in the latter State, and not reaching quite down to it in Ohio. This was, however, only a frost, not a *freeze*, and, as is well known to experienced cultivators, not a great disaster. The development of the cane was, of course, arrested where the blades were entirely killed, but this was not generally the case; and even where the verdure was wholly blighted, the partly mature cane seems to have gone on in a process of ripening or perfecting itself, not, perhaps, in a strict sense by the filling out of seed and a regular development of saccharine matter, but by a modification of the crude vegetable elements, the evaporation of water, and a general improvement in the taste of the cane. We noticed that cane which was in the flower when the frost of the 18th occurred began to acquire from day to day the taste of ripe cane, losing, in a great measure, the grassy or vegetable taste which belongs to that stage, even when there was no perceptible development of the seed head. In cases where the blades were not all killed we think the seeds continued to fill out as usual. We have tried to believe that the perfecting of the panicle was precipitated, or in some degree hastened, by the *visitation* upon the blades, but careful observation from day to day does not enable us to say that this was the case.

"On the night of Saturday, October 8, a heavy frost, amounting to a freeze, occurred. The thermometer in some of the cane regions fell to 28°, in others as low as 26°. Ice formed an eighth of an inch thick, and stalks of standing cane were literally frozen. This was the end of the growing, and every careful husbandman, particularly all who read the *Sorgo Journal*, immediately put their hands into the field and cut down and sheltered the frosted cane with as little delay as possible. Those who did so had the satisfaction of finding their cane, even when worked several weeks afterward, in good order, while those who neglected or delayed this work for a week or two, or three, were obliged to pay the penalty in an unsatisfactory return for their labors."

Clover-seed.—Both our returns and the market prices of this product show how short the crop is. In Pennsylvania it is $2\frac{5}{8}$ tenths below the crop of last year; in New York, $3\frac{1}{3}$ tenths below, and in Ohio, $2\frac{3}{7}$ tenths below. These are the principal clover-seed producing States, and any material change in prices need not be looked for.

The fall-sown crops.—However great the loss of farm labor has been, especially in the western States, the table shows that the usual amounts of wheat, rye, and barley have been sown. The weather has been unusually favorable for putting these crops in, and hence the labor of the country has had a longer time to operate in. It has been equally as favorable for the growth of these crops, and should they escape freezing out, the spring will open with the promise of an undiminished yield of these important staples.

EXPORTS AND PRICES OF PRODUCE.

[[From the Journals of Commerce of New York and Chicago.]

Table of the exports from New York of the leading agricultural products, from January 1, 1864, *to December* 21, *compared with those of the same time in* 1863, *and their prices at New York and Chicago on the* 21*st of December*, 1864.

	1864.	1863.	1864, December 21.	
	From Jan. 1 to Dec. 21.	From Jan. 1 to Dec. 21.	Prices at New York.	Prices at Chicago.
Wheat flour ..barrels	1,899,983	2,472,287	$9 55 to $12 00	
Rye flour ......do...	2,840	5,441	9 00 to 9 45	
Corn meal......do...	103,446	138,470	8 80	
Wheat ......bushels	12,165,343	15,098,012	2 28 to 2 60	$1 52 to $1 87
Corn ....do...	841,297	7,530,931	1 90 to 1 91½	91 to 1 05
Rye............do...	588	416,369	....	1 20 to 1 32
Barley.........do...	150	52,439	2 00 to 2 04½	1 40 to 1 55
Oats ....do ..	41,775	126,481	1 05 to 1 06	65 to 66
Peas ....do...	184,433	105,609		
Cotton ....bales	26,744	13,877	1 23 to 1 25	
Hay............do..	39,257	19,916	1 40 to 1 70	1 00 to 1 10
Hops...........do..	22,073	24,419	20 to 52½	33 to 55
Leaf tobacco...hhds.	89,639	57,545	10½ to 35	
Leaf tobacco ..pkgs.	69,774	46,948		
Manuf'd do..pounds	4,948,476	3,412,748		
Petroleum ...gallons	21,278,439	....	75	
Pork ....barrels	129,421	189,080	39 12½ to 42 25	35 00 to 40 00
Beef...........do ..	36,061	40,508	19 00 to 24 00	16 00 to 20 00
Beef ....tierces	49,290	58,885	39 00	
Cut meats ...pounds	93,573,155	181,584,756	16¾ to 21	16½ to 18½
Butter.........do...	14,151,375	22,324,757	38 to 60	30 to 44
Cheese ....do...	49,490,831	39,818,485	15 to 24	18 to 25
Lard ....do...	53,070,467	120,316,131	20½ to 25	22 to 23
Tallow ....do...	31,938,576	42,441,949	17 to 18	15 to 16¾

WESTERN PORK TRADE.

The indications are that there will be an increase in the number of hogs slaughtered at Cincinnati and Chicago over that of last season. Still the prevailing impression is that there will be a large decrease in the whole number packed.

The Price Current of Cincinnati says: "There is no doubt now that the number to be packed here this season will far exceed that of last season, though, at one time, we thought it would not reach it by one hundred thousand, owing to the loss of Kentucky hogs which was then anticipated; indeed, it is not improbable that it may reach 450,000 head. The want of funds, or of courage, which will cause a falling off at the smaller places, will necessarily increase the business at the larger places, and it is this which is causing such large receipts at this point now, for there are no exertions being made by packers to bring hogs to this market."

The packers of Chicago evince a very different spirit, and where energy is put forth it will be rewarded; where it is wanting, trade will decline.

Referring to the large increase in the receipt of hogs at Chicago, Henry Milward & Co's. Provision Circular remarks:

"The increase in the receipt of hogs for the week might cause a well-merited alarm in the minds of our provision merchants, were it not that they are well aware of the untiring exertions being made to keep our market well supplied. To do so is absolutely necessary. We have now in operation some thirty, first-class packing-houses, with twenty-five others of minor dimensions. The expenses they incur, if idle or only running on half work, are very great, so there is every incitement for the packers to endeavor to induce as large shipment of hogs as possible to our market. The eastern shippers are also largely interested in our receipts, and just at present are active competitors with us in our purchases.

"For the foregoing reasons the emissaries of the packers, shippers, and drovers are now scouring the country in all directions with a view to keeping us liberally supplied with hogs. *There is not a section of country in Illinois, Iowa, Wisconsin, Missouri, or Kansas, tributary to any railroad leading to Chicago, that our buyers are not actively traversing at present.* We are not much astonished at the large receipts for the past week, and we expect them to continue for a short time longer, but the more our supplies are increased the greater will be the falling off at the smaller packing points."

The market price had advanced a half cent per pound under these large receipts, and on the 21st of December the prices at Chicago were—

Extra hogs	$12 25	to	$12 75
Fair to good	11 50	to	12 00
Common	10 75	to	11 25

HOGS PACKED AT CINCINNATI.

Years.	Number.	Years.	Number.	Years.	Number.
1833	85,000	1844	240,000	1855	355,786
1834	123,000	1845	196,000	1856	405,396
1835	162,000	1846	205,000	1857	344,512
1836	123,000	1847	250,000	1858	446,677
1837	103,000	1848	475,000	1859	382,826
1838	182,000	1849	417,000	1860	434,499
1839	190,000	1850	393,000	1861	433,799
1840	95,000	1851	334,000	1862	474,467
1841	160,000	1852	352,000	1863	608,457
1842	220,000	1853	361,000	1864	370,623
1843	250,000	1854	421,000		

GERMAN STATISTICS.

Prussian wool.—The following account of the sale of wool in the principal wool markets of Prussia is interesting, chiefly because of the change in the *quality* of the wool it exhibits:

In 1863 the amount of wool sold in these markets was 29,631,504 pounds, of which 6,217,568 pounds were *ordinary* wool, 16,130,464 pounds *middling*, 6.706,224 pounds *fine*, and 689,248 pounds *extra fine*. The quality, as to fineness, was every year diminishing, and the Silesian wools, well known for their fineness and their short and even growth, were losing their superiority. The reason assigned for this change is the great progress made in France and the Zollverein of the *combing* wool industry. There is a like progress of this industry in the United States, but how far peace will modify it cannot now be foreseen.

Beet sugar in the Zollverein.—Twenty years ago 560,000,000 pounds of beetroot were made into sugar; now there are 4,032,000,000 pounds, or nearly *eight* times as much; then, 2,016 pounds were required to make 112 pounds of sugar; now, 1,344 pounds only to make the same amount. There is a duty of *nine* millions of dollars levied on this sugar; yet, it is said, the profit from the cultivation of this root is great.

Austrian tobacco.—The annual amount of tobacco grown in Austria is stated to be 125,440,000 pounds.

PRICES OF PRODUCE IN GREAT BRITAIN.

The following table exhibits the prices of breadstuffs on the 1*st of December for the years stated therein.*

	1864.	1863.	1862.	1861.	1860.
Wheat..............per quarter	$9 22	$9 78	$11 22	$14 48	$12 62
Barley ....do......	6 76	8 04	8 16	8 88	9 40
Oats ....do......	4 86	4 66	5 00	5 44	5 38
Rye....................do......	6 40	7 10	8 16	9 08	8 40
Beans ....do......	9 08	8 46	9 12	10 22	11 46
Peas ....do......	8 50	8 06	9 60	10 48	10 80

METEOROLOGY.

FROM THE SMITHSONIAN INSTITUTION.

OCTOBER, 1864.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain, (in inches and tenths,) for October, 1864, *at the following places, as given by the observers named. The daily observations were made at* 7 *o'clock a. m. and* 2 *and* 9 *p. m.*

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MAINE.				°		°	°	*In.*
Steuben	Washington	J. D. Parker	8	65	27	26	31. 8	5. 10
Lee	Penobscot	Edwin Pitman	7	64	27	26	44. 5	3. 95
West Waterville	Kennebec	B. F. Wilbur	7	66	27, 30	28	44. 5	2. 60
Gardiner	do	Rev. F. Gardiner	4, 7	66	27	29	46. 0	2. 76
Lisbon	Androscoggin	Asa P. Moore	5	63	27	26	44. 8	2. 90
Cornishville	York	G. W. Guptill	4	66	10	31	45. 4	3. 95
Cornish	do	Silas West	4, 5	60	10	24	40. 9	3. 80
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	5	66	30	23	41. 0	4. 09
Shelburne	do	F. Odell	6	69	12	26	45. 5	......
Barnstead	Belknap	Chas. H. Pitman	5	74	9, 10, 31	34	48. 1	3. 95
Claremont	Sullivan	Arthur Chase	6	68	30	27	46. 0	5. 95
Do	do	S. O. Mead	5	66	12, 30	30	46. 9	......
VERMONT.								
Lunenburg	Essex	Hiram A. Cutting	25	75	31	25	48. 1	6. 13
Craftsbury	Orleans	Jas. A. Paddock	6	63	29, 30	28	40. 1	4. 44
Burlington	Chittenden	Rev. McK. Petty	6	64	30	25	42. 5	4. 67
Middlebury	Addison	H. A. Sheldon	3	66	30	32	47. 6	3. 92
MASSACHUSETTS.								
Sandwich	Barnstable	N. Barrows, M. D	7	68	30	31	49. 2	2. 28
West Dennis	do	Eugene Tappan	7	69	10	35	51. 0	1. 94
Newbury	Essex	Jno. H. Caldwell	4	69	30	28	46. 3	......
Topsfield	do	A. M. Merriam	4	71	22	34	46. 8	3. 79
New Bedford	Bristol	Samuel Rodman	7	68	10	33	48. 4	2. 39
State L. Hospital	Worcester	F. H. Rice	4	70	10, 12	34	50. 5	4. 29
Mendon	do	Jno. G. Metcalf	5, 7	69	10	31	47. 5	......
Baldwinsville	do	Rev. E. Dewhurst	7	62	10	27	....	4. 20
Amherst	Hampshire	Prof. E. S. Snell	4	69	22	29	46. 4	2. 94
Springfield	Hampden	J. Weatherhead	4	78	10	28	47. 1	2. 07
Westfield	do	Rev. E. Davis	4	72	18	28	46. 9	3. 43
Richmond	Berkshire	Wm. Bacon	5	70	12	27	45. 1	......
Williams College	do	Prof. A. Hopkins	4, 5	63	12	30	45. 6	3.

Table showing the range of thermometer, &c., for October—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
RHODE ISLAND.								
				°		°	°	*In.*
Providence	Providence	Prof. A. Caswell	4, 7	70	9	35	48. 2	2. 85
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	4	68	10	30	46. 0	4. 93
Columbia	Tolland	Wm. H. Yeomans	5	78	10	32	50. 9	......
Middletown	Middlesex	Prof. John Johnston	5	72	12	33	41. 4	2. 66
Colebrook	Litchfield	Charlotte Rockwell	4, 7	66	12	29	45. 4	......
NEW YORK.								
Moriches	Suffolk	Mrs. & Miss Smith	7	75	22	34	55. 0	2. 75
Fort Ann	Washington	P. A. McMore	13	80	10	35	49. 8	......
South Hartford	....do	G. M. Ingalsbe	3	73	30	32	49. 4	4. 35
Fishkill	Dutchess	Wm. H. Denning	5	71	10, 12, 26	36	50. 4	2. 70
Garrisons	Putnam	Thomas B. Arden	4	69	10, 26	37	48. 0	2. 46
Throg's Neck	Westchester	F. M. Rogers	7	70	10, 18, 22	41	49. 7	2. 29
Deaf & Dumb Inst	New York	Prof. O. W. Morris	5	73	10, 15	42	54. 4	2. 68
St. Xavier's College	....do	Rev. Jno. M. Aubier	7	70	10	40	52. 6	2. 16
Flatbush	Kings	Eli T. Mack	7	68	10	34	52. 0	2. 04
Schenectady	Schenectady	Harmon V. Swart	4	66	27	30	47. 3	......
Gouverneur	St. Lawrence	C. H. Russell	6	67	30	25	47. 8	4. 30
South Trenton	Oneida	Storrs Barrows	....	......	....	......	....	6. 33
Oneida	Madison	Dr. S. Spooner	6	69	22	32	46. 8	7. 11
Theresa	Jefferson	S. O. Gregory	3	66	30	29	44. 5	6. 26
Palermo	Oswego	E. B. Bartlett	3	69	26	27	44. 2	6. 00
Oswego	....do	Wm. S. Malcolm	3, 6	68	22	35	47. 3	5. 72
Skaneateles	Onondaga	W. M. Beauchamp	5	66	9	31	44. 4	......
Baldwinsville	....do	John Bowman	6	65	22	33	44. 7	......
Auburn	Cayuga	John B. Dill	6	70	9, 15, 18	38	48. 4	......
Nichols	Tioga	Robert Howell	4	74	18	28	46. 9	......
Palmyra	Wayne	Stephen Hyde	6	70	26	34	48. 1	......
Geneva	Ontario	Rev. W. D. Wilson	6	67	9	34	47. 0	4. 18
Rochester	Monroe	Prof. C. Dewey	6	72	26	32	46. 5	5. 51
Wilson	Niagara	E. S. Holmes, D.D.S.	6	73	26	34	47. 2	......
Buffalo	Erie	Wm. Ives	3	70	15, 26	34	47. 0	5. 73
Jamestown	Chautauqua	Rev. S. W. Roe, M.D.	4	72	15	29	46. 3	7. 80
NEW JERSEY.								
Newark	Essex	W. A. Whitehead	7	70	10	32	51. 6	2. 68
Mount Holly	Burlington	M. J. Rhees, M. D	6	75	10	35	51. 8	......
Burlington	....do	John C. Deacon	6	74	10	31	50. 9	2. 00
Progress	....do	Thomas J. Beans	6	76	10	34	51. 5	1. 79
Haddonfield	Camden	J. S. Lippincott	6	75	10	35	51. 3	1. 85
Greenwich	Cumberland	Clarkson Sheppard	6	69	26	34	49. 2	1. 59
PENNSYLVANIA.								
Fallsington	Bucks	Ebenezer Hance	7	74	10, 18	37	52. 3	1. 80
Philadelphia	Philadelphia	Pf. J. A. Kirkpatrick	6	75	10	38	54. 2	1. 73
Do	....do	Homer Eachus	7	72	10	38	55. 6	1. 75
Germantown	....do	Thos. Meehan	7	78	10	31	....	......
Moorland	Montgomery	Anna Spencer	6	72	18	34	51. 4	2. 30

Table showing the range of thermometer, &c., for October—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
PENNSYLVANIA-C'd.				°		°	°	*In.*
Nazareth	Northampton	Lucius Ricksecker	7	79	18	32	50. 6	......
North Whitehall	Lehigh	Edward Kohler	5	70	10	29	50. 5	......
Silver Spring	Lancaster	H. G. Bruckhart	6	75	15, 30	32	50. 0	......
Berwick	Columbia	John Eggert	6	71	15	34	50. 6	1. 99
Harrisburg	Dauphin	John Heisely, M. D	6, 7	72	10	39	53. 2	1. 69
Tioga	Tioga	E. T. Bentley	4	78	15	26	47. 3	2. 30
Gettysburg	Adams	M. & H. E. Jacobs	6	76	10	32	49. 4	2. 67
Fleming	Center	Samuel Brugger	4	74	10, 26	30	48. 0	3. 51
Pennsville	Clearfield	Elisha Fenton	4	75	18, 26	28	45. 7	2. 52
Blairsville	Indiana	W. R. Boyers	11,14,15, 22	58	9	30	48. 0	6. 70
Connellsville	Fayette	John Taylor	5	80	21	29	47. 9	......
Cannonsburg	Washington	Rev. Wm. Smith, D.D	5	74	20, 22	30	....	......
DELAWARE.								
Wilmington	New Castle	Dr. Urban D. Hedges	6	78	10	32	52. 3	1. 80
MARYLAND.								
Annapolis	Anne Arundel	Wm. R. Goodman	6	77	10, 21	35	54. 8	3. 20
Oakland	Howard	Philip Tabb	6	72	10	33	49. 8	......
Sykesville	Carroll	Miss H. M. Baer	6, 7	75	26	33	51. 9	1. 50
DIST. OF COLUMBIA.								
Washington	Washington	Smithsonian Inst'n	6	77	10	37	53. 9	1. 32
SOUTH CAROLINA.								
Beaufort	Beaufort	Mrs. M. M. Marsh	5, 6, 7, 12	82	23	52	60. 3	......
Hilton Head	....do	Lieut. C. R. Suter	2	92	29	50	68. 1	2. 70
KENTUCKY.								
Louisville	Jefferson	Mrs. L. Young	4	78	9, 25, 30	30	51. 3	3. 52
OHIO.								
Saybrook	Ashtabula	James B. Fraser	6	72	25	33	47. 8	2. 75
Austinburg	....do	E. D. Winchester	6	73	26	30	51. 0	2. 15
New Lisbon	Columbiana	J. F. Benner	5	82	22	30	48. 1	2. 18
Welshfield	Geauga	B. F. Abell, A. M	3, 4, 5, 6	70	9	33	47. 0	2. 79
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	6	75	25	36	50. 4	1. 63
Wooster	Wayne	Martin Winger	5	75	21	30	48. 6	......
Smithville	....do	John H. Myers	5	72	9, 14	34	48. 2	......
Gallipolis	Gallia	A. P. Rogers	5, 6	77	19, 20, 31	32	50. 8	2. 68
Kelley's Island	Erie	Geo. C. Huntington	6	70	9	35	51. 2	3. 20
Norwalk	Huron	Rev. A. Newton	6	71	25	31	47. 6	2. 84
Westerville	Franklin	Prof. D. Thompson	6	71	20	26	48. 0	2. 22
Kingston	Ross	Prof. Jno. Haywood	5	76	20	32	50. 4	2. 65
Portsmouth	Scioto	L. Engelbrecht	5	74	9, 31	37	52. 6	2. 65
Urbana	Champaign	Prof. M. G. Williams	6	68	25	27	46. 8	1. 89
Hillsborough	Highland	J. McD. Mathews	6, 7	71	9	33	50. 6	2. 19
Ripley	Brown	Dr. G. Bambach	4	79	20	33	53. 2	2. 43

Table showing the range of the thermometer, &c., for October—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
OHIO—Cont'd.								
				°		°	°	*In.*
Bethel	Clermont	Geo. W. Crane	4	76	19, 20	31	46. 4	4. 88
Eaton	Preble	Miss Ollitippa Larsh	6	64	9	33	47. 9	1. 45
College Hill	Hamilton	John W. Hammitt	4	79	9	32	49. 4	3. 88
Do	....do	I. H. Wilson	4	71	23	36	51. 3	3. 15
Do	....do	Geo. W. Harper	4	82	19, 25	33	50. 2	2. 92
MICHIGAN.								
Pontiac	Oakland	Jas. A. Weeks	5	64	21, 25	28	45. 3	......
Monroe City	Monroe	Miss F. E. Whelpley	5	69	25	29	46. 8	1. 38
Ypsilanti	Washtenaw	C. S. Woodard	....	......	....	......	....	......
Agricultural College	Ingham	Prof. R. C. Kedzie	2	63	17	24	45. 7	1. 85
Garlick	Ontonagon	Edwin Ellis	13	60	24, 25	30	42. 2	......
INDIANA.								
New Castle	Henry	T. B. Redding, A. M	3,7,15,16	64	20	28	45. 4	1. 65
Spiceland	....do	Wm. Dawson	4	68	19, 20	30	47. 6	1. 80
New Albany	Floyd	Dr. E. S. Crozier	4	75	31	30	49. 8	1. 90
South Bend	St. Joseph	Reuben Burroughs	11	71	13, 20, 25	30	45. 8	2. 07
Indianapolis	Marion	Royal Mayhew	4	69	20	30	48. 6	1. 89
Do	....do	W. W. Butterfield	4	69	20	27	48. 4	......
Bloomingdale	Park	Wm. H. Hobbs	6	70	9	30	....	......
Rensselaer	Jasper	Dr. J. H. Loughridge	4	68	9, 20	27	46. 5	1. 70
New Harmony	Posey	Jno. Chappellsmith	4	72	21	25	51. 1	1. 13
ILLINOIS.								
Chicago	Cook	Samuel Brooke	14	68	17	25	45. 0	......
Riley	McHenry	E. Babcock	14	70	17	21	44. 5	2. 13
Ottawa	La Salle	Mrs. E. H. Merwin	14	72	18	33	48. 0	1. 72
Winnebago	Winnebago	Jas. W. Tolman	14	70	17, 18	27	45. 5	2. 28
Tiskilwa	Bureau	Verry Aldrich	14	72	18	29	49. 0	......
Wyanet	....do	E. S. & Miss Phelps	10, 14	70	18	26	50. 1	3. 13
Elmira	Stark	O. A. Blanchard	14	70	18	27	47. 3	1. 88
Peoria	Peoria	Frederick Brendel	14	72	9	34	50. 1	1. 53
Pekin	Tazewell	J. H. Riblett	14	72	9, 13	30	49. 9	1. 42
Hoyleton	Washington	J. Ellsworth	3	76	31	29	49. 8	1. 50
Waverley	Morgan	Timothy Dudley	10, 11	76	31	32	50. 1	1. 75
Galesburg	Knox	Pf. Wm. Livingston	12	69	18	29	47. 1	2. 60
Vermont	Fulton	....	11, 14, 26	68	18	31	54. 7	2. 66
Augusta	Hancock	S. B. Mead, M. D	14	69	31	31	48. 1	2. 90
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lüps	5	62	25	30	46. 1	1. 70
Milwaukee	Milwaukee	Carl Winkler	11	60	17	29	46. 7	1. 55
Do	....do	I. A. Lapham, LL.D	11, 14	60	17	28	45. 7	1. 63
Green Bay	Brown	Friedrich Deckner	3	62	17, 18	27	44. 7	1. 39
Geneva	Walworth	Wm. H. Whiting	14	69	9, 16	30	45. 6	......
Delavan	....do	Leveus Eddy	14	70	17	24	43. 7	1. 74
Waupacca	Waupacca	H. C. Mead	14	68	17. 25	30	45. 8	......
Embarrass	....do	Edw'd E. Breed	4	62	13, 17	22	42. 8	1. 79
Madison	Dane	Prof. J. W. Sterling	....	......	....	......	....	......
Beloit	Rock	Henry D. Porter	14	67	17	26	44. 5	1. 89

Table showing the range of the thermometer, &c., for October—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MINNESOTA.								
				°		°	°	*In.*
Beaver Bay	Lake	C. Wieland	9	60	8	29	42. 9	2. 13
St. Paul	Ramsay	Rev. A. B. Paterson	13	68	16	25	44. 9	1. 60
New Ulm	Brown	Charles Roos	13	74	22	29	47. 3	2. 34
IOWA.								
Lyons	Clinton	P. J. Farnsworth, M. D	14	70	13	30	48. 6	3. 45
Dubuque	Dubuque	Asa Horr M. D	14	65	13, 18	30	48. 1	2. 81
Muscatine	Muscatine	J. P. Walton	14	64	13	26	46. 7	3. 11
Guttenburg	Clayton	P. Dorweiler	1, 13, 14	62	18	29	46. 6	2. 40
Monticello	Jones	....	13	67	18	24	43. 8	2. 55
Independence	Buchanan	D. S. Deering	14	68	18	27	46. 0	......
Do	....do	A. C. Wheaton	14	70	13, 18	26	46. 1	2. 06
Mt. Vernon	Linn	Alonzo Collin	14	63	18	28	46. 2	......
Iowa City	Johnson	Theo. S. Parvin, A. M	14	68	18	26	47. 8	4. 55
Fort Madison	Lee	Daniel McCready	2	70	18	29	49. 1	3. 47
Iowa Falls	Hardin	N. Townsend	3	63	8, 18	32	45. 7	4. 62
Algona	Kossuth	Dr. & Miss L. McCoy	13	66	31	26	43. 0	2. 31
MISSOURI.								
St. Louis	St. Louis	Geo. Engelmann	11	73	31	34	51. 7	3. 15
Allenton	....do	Aug. Fendler	11	76	30, 31	25	47. 3	2. 13
Canton	Lewis	Geo. P. Ray	11, 14	75	31	25	47. 3	5. 31
Harrisonville	Cass	John Christian	11	78	22	30	52. 4	2. 81
Easton	Buchanan	P. B. Sibley	11	71	18, 19	29	....	2. 93
KANSAS.								
State Agricult'l Coll.	Riley	H. L. Denison	11	73	22, 29	25	46. 0	0. 68
Fort Riley	Davis	James H. Pine	11	84	28	28	55. 0	......
NEBRASKA TER.								
Elkhorn	Washington	Miss A. M. J. Bowen	13	70	18, 28	26	44. 8	......
Bellevue	Sarpy	Rev. Wm. Hamilton	1	71	28, 29	28	46. 6	4. 23
MISSISSIPPI.								
Natchez	Adams	Robert McCary	1	80	22, 23	34	59. 9	4. 40
UTAH TERRITORY.								
Great Salt Lake City	Great Salt Lake	W. W. Phelps	10	76	27	31	53. 5	3. 75

OCTOBER, 1864.

Table showing the average temperature and fall of rain (in inches and tenths) for the month of June, in each year named, and for the five years first named, collectively, with the average number of places in each State in which the observations were made.

States and Territories.	Av. number of places.	Averages, 1855.		Averages, 1856.		Averages, 1857.		Averages, 1858.		Averages, 1859.		Av. for five years.		Averages, 1863.		Averages, 1864.	
		Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.
		Deg.	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*
Maine	6	48.4	7.0	48.0	4.9	47.0	6.8	47.0	4.7	42.4	1.9	46.6	5.1	48.2	4.74	42.6	3.58
New Hampshire	3	50.2	9.2	47.4	2.8	47.1	6.6	45.3	6.3	41.0	1.9	46.2	5.3	46.2	3.74	45.5	4.50
Vermont	4	46.7	6.0	46.0	2.1	45.6	5.2	47.6	4.1	41.2	1.7	45.4	3.8	49.5	3.86	44.6	4.79
Massachusetts	12	47.4	9.3	50.6	2.4	49.6	4.1	52.2	3.1	46.4	2.2	49.2	4.2	52.3	3.13	49.2	3.09
Rhode Island	1	....	....	....	....	50.5	2.9	54.2	2.8	48.0	2.6	50.9	2.8	51.4	2.97	....	......
Connecticut	4	52.3	10.0	50.9	1.8	51.3	5.0	53.3	3.0	46.8	1.4	59.9	4.1	50.7	4.25	45.9	3.80
New York	17	49.2	5.0	49.1	1.8	48.4	4.9	52.8	3.1	46.1	1.6	49.1	3.3	49.0	3.42	48.0	4.47
New Jersey	4	51.8	4.6	52.8	1.4	55.2	3.5	55.2	1.6	47.5	2.7	52.5	2.8	54.1	4.52	51.1	1.98
Pennsylvania	19	50.6	3.6	51.3	1.7	52.1	3.0	55.9	2.3	48.7	1.8	51.7	2.5	50.7	4.96	50.3	2.63
Delaware	1	51.7	....	....	....	56.3	3.8	62.2	2.6	....	3.3	56.7	3.2	....	....	52.3	1.80
Maryland	4	52.0	3.8	53.8	3.1	54.2	2.4	56.8	3.0	50.4	2.4	53.4	2.9	55.6	3.21	52.2	2.35
District of Columbia	1	53.9	3.5	54.8	1.8	54.6	1.9	58.4	2.5	51.7	2.5	54.7	2.5	54.1	5.02	....	......
South Carolina	5	62.6	0.8	62.1	2.3	61.9	1.5	68.0	1.6	66.9	0.6	64.3	1.4	....	....	64.2	2.70
Tennessee	2	54.7	1.2	58.5	2.5	56.9	2.2	62.2	2.3	55.7	1.3	57.6	1.9	....	....	....	......
Kentucky	4	53.2	1.2	56.6	1.8	53.5	3.0	59.0	3.5	52.9	1.6	55.1	2.2	51.0	5.89	51.3	3.52
Ohio	20	50.4	2.8	53.1	1.7	49.7	4.5	55.5	3.5	46.3	2.2	51.0	2.9	48.0	3.18	49.4	2.66
Michigan	7	46.4	3.5	48.5	2.6	46.2	2.1	51.1	3.1	45.5	2.8	47.5	2.8	45.6	2.34	45.0	1.62
Indiana	5	50.9	1.3	55.4	1.5	51.4	2.6	55.9	3.6	51.3	2.6	53.0	2.3	46.9	3.70	47.9	1.73
Illinois	14	51.2	2.8	55.7	3.0	50.5	2.2	53.4	3.6	48.9	1.7	51.9	1.6	44.6	3.79	48.5	2.13
Wisconsin	6	45.9	2.4	49.3	2.5	46.7	3.1	48.9	3.2	44.7	2.0	47.1	2.6	43.0	2.75	45.1	1.67
Minnesota	3	....	....	49.6	2.7	46.9	0.8	44.1	1.6	41.7	1.3	45.6	1.6	39.2	1.37	45.0	2.02
Iowa	9	47.7	3.1	53.2	6.6	49.2	2.2	51.2	4.6	48.4	0.8	50.0	3.4	42.7	3.66	46.5	3.13
Missouri	2	53.9	3.9	60.0	2.2	71.1	1.9	58.6	7.7	54.5	1.8	59.6	3.5	47.6	3.87	49.7	3.27
Nebraska Territory	3	....	....	....	....	48.9	3.9	51.9	6.0	51.6	1.3	54.1	3.7	39.6	0.75	45.7	4.23
Kansas	3	....	....	....	....	54.3	....	56.9	6.6	54.3	0.5	55.2	3.6	49.1	1.39	50.5	0.68
California	2	....	....	58.2	0.2	61.5	0.4	50.5	2.6	65.4	0.2	61.4	0.9	....	....	....	......

FROST, SNOW, AND ICE.

Cornish, Maine.—October 10.—Ground frozen an inch this morning.

Steuben, Maine.—October 10.—Ground frozen hard this morning. 22d, white frost. 26th, very white frost. 27th, very white frost, ground frozen hard. Ice in a pail of water did not melt through the day. 30th, white frost.

West Waterville, Maine.—October 10.—First general frost to kill potato tops last night. 12th, ice formed last night as thick as window-glass; this is the first ice. 27th, profuse white frost last night.

Lisbon, Maine.—October 1.—Quite severe frost. 9th, 10th, and 11th, heavy frost. 27th, ice an eighth of an inch thick. 30th, ice this morning a quarter of an inch thick.

Cornishville, Maine.—October 10.—Heavy frost last night and ground frozen.

Lee, Maine.—October 9.—First snow of the season at 10 a. m.; melted as it fell. 28th, snowed in the night one inch.

Barnstead, New Hampshire.—October 10.—Ice in the morning half an inch thick; ground frozen an inch.

Stratford, New Hampshire.—October 9.—Ground white with snow this morning. 10th, Mountains white with snow to-day, and the same every day to the end of the month.

Shelburne, New Hampshire.—October 1.—Frost this morning. 9th, snow squalls on the mountains. 10th, ice a sixteenth of an inch thick on puddles. 14th, tops of mountains covered with snow, having an elevation of two thousand feet. 24th, strawberries in blossom, in some places nearly as much so as they are in June. 27th, frost. 30th, ground frozen in the road, half an inch.

Claremont, New Hampshire.—October 9.—Snow squall between 10 and 11 a. m. 10th, the first frost destructive to vegetation; ice three-sixteenths of an inch thick. 12th, a hard frost and freeze, finished what the 10th had left alive. This season has been remarkable for the late date of the first killing frost. This is the third year in which vegetables have been substantially untouched by frost till about the middle of October.

Lunenburg, Vermont.—October 10.—This morning ice was formed about a quarter of an inch thick, and ploughed land frozen a little. 31st, the first hard frost of the season; ground frozen quite hard. Previous to this the autumn has been remarkable. The linden trees in my yard have leaved out fully the second time, and many leaves came out on an elm. My woodbine has leaved out, and grown two or three inches since first shedding its leaves; many strawberries are in blossom, and some blossoms are on an apple tree. The season had previously been very dry, and though there were no severe frosts, and but little freezing, yet leaves were pretty generally off, and then the warm rain gave everything new life and a great tendency to grow.

Craftsbury, Vermont.—October 1.—This morning occurred the first frost in this locality this season that has touched the top leaves of late planted potatoes. October 9, this morning the ground is white with the first snow; it disappeared before night. October 30, water frozen this morning an eighth of an inch in thickness, the first ice of the season.

West Dennis, Massachusetts.—October 10.—First frost, ice formed where a little water had been left in troughs.

Sandwich, Massachusetts.—October 10.—Heavy white frost this morning. 30th and 31st, white frost.

Mendon, Massachusetts.—October 10.—Ice formed in still water.

Baldwinsville, Massachusetts.—October 13.—Sleet and snow. 20th, ground frozen quite hard this morning.

Worcester, Massachusetts.—October 10, 12, and 22.—Frost.

Topsfield. Massachusetts.—October 10 and 11.—Slight frost. 12th, heavy frost. 19th and 20th, light frost. 22d, heavy frost.

New Bedford, Massachusetts.—October 28.—Leaves of most deciduous trees falling very fast. 31st, most trees stripped of foliage.

Middletown, Connecticut.—October 10.—White frost, the first of any account for the season.

Colebrook, Connecticut.—October 10.—Severe frost, ground slightly frozen. 29th, slight fall of snow in the afternoon.

Wilson, New York.—October 8.—Light freeze last night, the first of the season. 15th, light white frost last night. 26th, heavy white frost; did not freeze very hard. 31st, there has not yet been sufficient frost to kill anything except the tenderest leaves and plants. Many trees and vine leaves are still green.

Skaneateles, New York.—October 8.—Snow at 9 p. m. from the north. October 9, snow fell four inches deep last night; snowing at intervals all day. It was reported that frost and ice occurred on low lands, cannot on inquiry learn that it was so. 15th, first white frost I have seen this season, very slight. 22d and 26th, white frost. October 31 has been unusually wet and disagreeable; grass, this, the 31st, is growing and looks like in June and July. Many apple trees have not lost a leaf apparently, but are as green as midsummer. Grape vines until to-day were as luxuriant as months ago.

Flatbush, New York.—October 10.—Frost last night.

New York, New York.—October 10.—First frost, killing cucumber, squash, and beans, but not tomatoes.

Rochester, New York.—October 9.—Snow last night and this morning, half an inch deep, but melted before noon. Frost on the 14th, hard frost on the 15th.

South Trenton, New York.—October 1.—Frost this morning, doing no damage except on some very low ground. 9th, first snow covering the ground, soon melted. 11th, ice an eighth of an inch thick in pail full of water. 13th, 14th, and 15th, white frost.

Palmyra, N. Y.—October 9.—Roofs of houses and boards white with snow this morning; snowed some during the day. 11th, hard frost last night. The first of the season. 15th, 18th, 20th, 26th, frost.

Moriches, N. Y.—October 10.—The first real frost of the autumn; a very slight frost had been noticed one morning in September, but so slight that it was not recorded.

Theresa, N. Y.—October 1.—A hard frost. 9th, snow at 7 p. m., mostly melted as it fell. 10th, water freezes in dishes standing out. 26th, hard frost, ground frozen for the first time. 30th, a thick white frost.

Jamestown, N. Y.—October 8.—First snow. It fell to the depth of four inches, and would have been considerably deeper had it not melted fast. 10th, heavy frost. 22d, snowed this night, but melted as it fell. A slight snow on the evening of the 31st.

Oneida, N. Y.—October 12.—First frost this morning. 22d, first general frost.

Throg's Neck, N. Y.—October 10, 18.—Heavy white frost. 22d, light white frost.

South Hartford, N. Y.—October 12.—First frost. The mercury at 6 a. m. indicated 30°. It was sufficient to kill all tender vegetation. This is much later in the season than is usual for frost.

Palermo, N. Y.—October 9.—Snow covered the ground this morning to the depth of half an inch; cold and spits of snow through the day. 22d, a slight frost this morning. 26th, first black frost; killed vegetation where it was not under the shade of trees and buildings.

Nichols, N. Y.—October 10.—First killing frost. I never knew autumn to advance so far before without a hard frost.

Baldwinsville, N. Y.—October 8.—Snow at night.

Progress, N. J.—October 10.—First frost, very heavy. 18th, heavy frost.

Burlington N. J.—October 10.—White frost, like a snow; the first frost of the season.

Mount Holly, N. J.—October 10.—Heavy frost this morning, the first of the season. All the tender plants were cut down. Ice was observed in the ditches in the country.

Greenwich, N. J.—October 11.—Heavy frost, and skim ice observed in water in shallow vessels exposed during the night. 15th, heavy frost.

Haddonfield, N. J.—October 10.—A heavy frost. 18th, frost.

Newark, N. J.—On the morning of the 10th the unusual phenomenon was recorded of the first frost and first ice occurring together. On the 18th, 19th, 26th and, perhaps, one or two other mornings, there were white frosts, but on no other occasion did the mercury fall to the freezing point.

Horsham, Penn.—October 10.—A severe frost this morning, killing all tender vegetation, and unusually severe for the first. Heavy frosts followed every morning for a week or more.

Philadelphia, Penn.—October 9.—Night, first hoar frost observed. 10th, early morning, ice formed on the surface of still water in the suburbs.

Fallsington, Penn.—October 9.—A light frost. 10th, heavy frost and ice. 18th, heavy white frost.

Grampion Hills, Penn.—October 8.—At 1.30 p. m., rain and snow for twenty minutes. In evening frost and ice. 10th, 21st, heavy frost.

Harrisburg Penn.—October 26.—White frost.

Berwick, Penn.—October 10.—First frost.

Byberry, Penn.—October 9.—Slight frost on low grounds. 10th, very heavy frost, ice an eighth of an inch thick; sorghum killed. Frost also on the 11th, 15th, 18th, 19th, 20th, and 26th.

Tioga, Penn.—October 9.—A very little snow. 10th, hard frost last night, the first this season. Ice formed half an inch and the ground froze quite hard.

Blairsville, Penn.—October 8.—Fine snow fell, commencing at 3 o'clock p. m. Five inches of snow on the 8th, three inches on the 9th, and four inches on the 12th.

Fleming, Penn.—October 9.—The Alleghany mountains are white with snow this morning. Snow flying during the day. 10th, heavy frost this morning; killed all the unripe vegetables.

Germantown, Penn.—October 10.—Ice this morning an eighth of an inch thick, the only time during the month.

North Whitehall, Penn.—Frost on the 10th, 11th, 18th, 25th.

Connellsville, Penn.—October 9.—Ice this morning. 10th, ground frozen

Nazareth, Penn—October 10.—First frost of the season this morning; vegetables frozen. 18th, second frost, quite severe.

Silver Spring, Penn.—October 10.—First frost; killed vegetables.

Canonsburg, Penn.—October 8.—Sleet and snow squall at 5 p. m.

Wilmington, Delaware.—October 10.—The first frost and ice.

Sykesville, Maryland.—October 10.—Heavy frost; thin ice in the valley.

Natchez, Mississippi.—October 10.—Frost this morning, the first of the season. 11th, light frost.

Austinburg, Ohio.—October 8.—Some hail and snow flakes to-day. 10th, ice on water this morning, first freeze this autumn. 14th, slight frost. 15th, hard frost.

New Lisbon, Ohio.—Snow on the 8th and 9th, frost on the 10th, 14th, 15th, 18th to 22d; ice on the 18th and 21st.

Cleveland, Ohio.—October 8.—Rain, hail, and snow at times all day. 14th, slight frost last night.

Kingston, Ohio.—October 8.—Flurries of snow. 10th, 11th, 13th, slight frost. 14th, heavy frost. 22d, snow squall for a few minutes at 7 a. m.

Kelley's Island.—October 8.—A few flakes of snow at two or three different times, mixed with rain. 9th, a thin skim of ice on the head of a barrel standing on end and exposed to a strong current of wind; cucumber vines not wilted, and blossoms as fresh as at any time during the season. Reports from the interior of the island say there was a decided frost in some localities from a quarter to a half a mile from the lake. 21st, slight traces of hoar frost. 22d, ground white with snow, thawing as it falls. 25th, hoar frost.

Urbana, Ohio.—October 8.—Very light dash of snow at 8½ a. m. and at 5 and 6 p. m. 9th, ice; all tender vegetation destroyed.

Hillsboro', Ohio.—October 9.—Heavy frost. 21st, snow at night.

Cincinnati, Ohio.—Frost on the 14th, 18th, 19th, 25th, 29th, 31st.

Portsmouth, Ohio.—October 8.—Frozen rain and snow this p. m. 23d, snowed quite heavy last night.

Westerville, Ohio.—October 14.—Ice this morning, the first noticed this season. 22d, the ground white with snow this morning.

Bethel, Ohio.—October 9.—Black frost; first to injure. 13th, 19th, 25th, 29th, 30th, 31st, heavy white frost. Also, some frost on the 16th and 17th.

Saybrook, Ohio.—October 9.—At 6 a. m. sufficient sleet to give a whitish appearance to boards, fences, &c.; very little on the ground. (Snow said to be a foot deep this morning at Pierpont, about fifteen miles southeast of this place; considerable damage done to fruit trees, &c.) 10th, very light frost on low ground, no damage done. Frost on the 14th, 15th, 17th, 21st, 25th, 26th. Ice on the 15th and 25th.

Milnersville, Ohio.—October 9.—First frost. 10th, heavier frost.

Welshfield, Ohio.—October 8.—The first snow storm of the season; snow fell to the depth of about four inches, but soon melted away. On the morning of the 14th occurred the first frost, but it did little or no harm. Dahlias continued in bloom till the 25th; on the morning of that day the frost was sufficiently severe to destroy them.

Smithville, Ohio.—October 8.—The first snow storm of the season commenced at 8 a. m. and ended at 8 p. m. The snow melted as soon as it reached the earth. 10th, first frost this season that affected vegetation of any account.

Gallipolis, Ohio.—October 9.—First killing frost this morning.

Wooster, Ohio.—October 8.—To-day the first snow fell. It commenced about 10 a. m., and continued occasionally through the day; it melted as fast as it fell. October 10.—This morning occurred the first frost to do any damage to vegetables.

Lebanon, Ohio.—October 9.—First killing frost.

Norwalk, Ohio.—October 9.—First frost. 22d, first snow.

Pontiac, Michigan.—October 8.—Fine snow from daybreak to 9 a. m.; balls at 11 a. m. and 4 p. m. 9th, thermometer 26° at 6 a. m.; ice a quarter of an inch thick; ground frozen half an inch; apples not injured. 11th, 13th, 14th, 17th, 20th, 21st, and 25th, frost.

Oshtemo, Michigan.—October 9.—11th, 13th, 23d, and 25th, frost.

Garlick, Michigan.—Snow and rain from October 6th, 9 p. m., to October 7th, 9 p. m.

Newcastle, Indiana.—October 8.—Small flakes of snow occasionally all day. 9th, 12th, and 14th, heavy frost. 21st and 22d, snow nearly an inch and a half.

New Albany.—October 7 and 8.—White frost.

Spiceland, Indiana.—October 8.—A few small snow flakes about 1½ p. m. 21st, a little fine snow falling in the afternoon; fast and heavy at night; half an inch deep at 9 p. m., and doubtless considerable melted as it fell. 22d, snow three inches and seven-tenths deep this morning; about all melted off by night.

Rensselaer, Indiana.—October 9 and 11.—Very heavy frost, with ice; on the 9th the ice was a quarter of an inch thick.

Elmira, Illinois.—October 8.—Ground frozen a little, for the first time this season. 20th, first snow, ground quite white.

Riley, Illinois.—October 9.—Thermometer 25° at daylight; ground frozen. 12th, heavy frost. 13th, frost. 17th, ground frozen, and some ice formed in the creek. 21st, rain and snow from 2 to 9 p. m.; snow melted as it fell.

Hoylton, Illinois.—October 9.—Hard frost.

Waverley, Illinois—October 21.—First appearance of snow, a light fall.

Ottawa Illinois.—October 8, 9, and 11.—Frost. 13th, hard frost. 18th, hard frost; ground (where saturated with moisture) frozen a quarter of inch. 19th, frost.

Wyanet, Illinois.—Frost on the 11th, and frequently afterwards. Ice on the 9th, 13th, and 18th. Three-quarters of an inch of snow on the 21st.

Tiskilwa, Illinois.—October 9.—Hard white frost; ice formed a quarter of an inch thick.

Manchester, Illinois.—October 10.—Hard frost this morning. 15th, hoar frost this morning.

Winnebago, Illinois.—October 8.—Frost. 9th, severe frost, first of sufficient severity to kill tomatoes, beans, &c.

Pekin, Illinois.—October 9.—First heavy frost; one hundred and seventy-one days since the last heavy frost. Intervals of slight frosts one hundred and thirty days.

Peoria, Illinois.—Latest frost in spring, April 20th; first frost in autumn, October 9th.

Augusta, Illinois.—October 9.—First frost to kill tender vines. 13th, light frost. 20th, first snow; fell about a quarter of an inch.

Wyanet, Illinois.—October 1.—Heavy frost, with ice, on the 1st, and on several subsequent days. On the 5th, ground frozen a quarter of an inch. On the 11th a little round snow scattered over the ground.

Canton, Missouri—October 9.—Hard frost. 10th, light frost.

Harrisonville, Missouri.—Light frost every morning from the 6th to the 12th. 16th, most of the tender vines killed. 20th, threatening snow in the afternoon; a little light sleet about 6 p. m. 22d, a sharp frost this morning; ice on still water about the thickness of writing paper.

Embarrass, Wisconsin.—October 1.—Hard frost on the 1st day of October, and very often through the month. No snow recorded.

Bloomfield, Wisconsin.—October 9.—First ice formed; tomato vines entirely destroyed. No snow mentioned.

Green Bay, Wisconsin.—No snow mentioned.

Milwaukee, Wisconsin.—October 8 and 9.—Ice in the morning. 11th, heavy frost. No snow mentioned.

Beloit, Wisconsin.—No snow recorded.

Delavan, Wisconsin.—October 21.—Slight snow, with rain, from 11.15 a. m. to 12 m.

Manitowoc, Wisconsin.—No snow recorded.

New Ulm, Minnesota.—October 8.—Ice, the first this autumn; in some places from an eighth to a quarter of an inch thick; melted about 9 a. m.

St. Paul, Minnesota.—October 17.—A little snow from 5 to 7 a. m.

Lyons, Iowa.—October 5.—Hard frost this morning, enough to kill vines and tomatoes. 8th, frost. An inch and a half of snow fell on the 20th and 21st.

Spring Grove, Iowa.—October 13.—A very white frost and freeze last night. 20th, rain and snow.

Algona, Iowa.—October 19.—Snowed one inch this night.

Independence, Iowa.—October 20.—Snowed half an inch.

Monticello, Iowa.—October 20.—First and only snow this month. It was very wet as it fell, between the showers of rain.

Independence, Iowa.—October 8.—Heavy frost. 11th and 12th, frost. 13th, heavy frost. 20th, commenced snowing at 4 p. m.; changed to rain at 8 p. m.

Guttenburg, Iowa.—Frost from the 8th to the 13th, except on the 11th. Ice on the 18th a third of an inch thick.

Muscatine, Iowa.—October 8—Light frost. 9th, frost last night enough to kill tomato vines, for the first time this autumn. Ice formed a quarter of an inch thick. 21st, a little snow, the first this season.

Dubuque, Iowa.—October 8.—Frost this morning. 9th, ice quarter of an inch thick.

Iowa City, Iowa.—October 9.—Hard frost, and first ice, a fourth of an inch thick. 21st, first snow, an inch deep.

Fort Riley, Kansas.—October 8.—First frost of the season.—20th, first snow, not measurable.

Manhattan, Kansas.—October 6.—Frost on the low lands. 8th, frost. 20th, light snow, eight hundredths of an inch.

Bellevue, Nebraska.—October 20.—Snow from 1 a. m. to 9 p. m. It melted fast, but covered the ground to the depth of about three inches. If it had not melted it would have measured six or eight inches, perhaps ten.

Richland, Nebraska—October 8.—Heavy white frost and ice, ground slightly frozen. 9th, a little white frost. 15th, ice. 16th, a little white frost and ice. 20th, snow from before day till in the night; one inch of snow on the ground at 7 a. m, melting through the day. 22d, heavy white frost, ground stiffened. 24th, 28th, 29th, 30th, white frost.

Great Salt Lake City, Utah.—October 31.—The autumn has been dry, with very little frost or snow, and the temperature more even than usual.

NOVEMBER 6, 1864.

Table showing the highest and lowest range of the thermometer, with dates prefixed,) the mean temperature, and amount of rain, (in inches and tenths,) for November, 1864, *at the following places, as given by the observers named. Daily observations were made at the hours of* 7 *a. m. and* 2 *and* 9 *p. m.*

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MAINE.								
				°		°	°	*In.*
Steuben	Washington	J. D. Parker	9, 10	54	24	18	37. 2	6. 20
Lee	Penobscot	Edwin Pitman	10	58	17, 24	16	36. 2	4. 65
West Waterville	Kennebec	B. F. Wilbur	10	58	17	18	35. 8	4. 85
Gardiner	....do	Rev. F. Gardiner	10	61	17	17	37. 8	5. 77
Lisbon	Androscoggin	Asa P. Moore	10	60	17	13	36. 8	7. 09
Cornish	York	Silas West	10	58	17	14	33. 6	5. 70
Cornishville	....do	G. W. Guptill	10	62	24	18	36. 2	6. 36
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	10	60	24	12	32. 3	3. 78
Shelburne	Sullivan	Fletcher Odell	10	60	3	16	35. 8	......
Claremont	....do	Stephen O. Mead	9	65	17	15	37. 6	......
VERMONT.								
Lunenburg	Essex	Hiram A. Cutting	10	55	18, 24	15	33. 9	3. 70
Craftsbury	Orleans	Jas. A. Paddock	9	58	24	16	32. 0	4. 05
Middlebury	Addison	H. A. Sheldon	12	65	24	19	38. 9	2. 22
MASSACHUSETTS.								
Sandwich	Barnstable	N. Barrows, M. D.	30	68	24	22	42. 6	4. 31
Topsfield	Essex	A. M. Merriam	9	66	15, 17	24	43. 0	3. 85
Newbury	....do	Jno. H. Caldwell	9, 10	65	24	19	....	......
New Bedford	Bristol	Samuel Rodman	30	69	24	24	42. 5	4. 06
State Lunatic Hosp'l	Worcester	F. H. Rice	9	62	17	18	41. 7	4. 81
Mendon	....do	Jno. G. Metcalf	10	63	17	19	40. 7	......
Baldwinsville	....do	Rev. E. Dewhurst	30	59	17, 24	13	33. 7	4. 92
Amherst	Hampshire	Prof. E. S. Snell	9	61	17	11	38. 0	6. 20
Springfield	Hampden	J. Weatherhead	30	68	15, 17	10	38. 3	5. 16
Westfield	....do	Rev. E. Davis	30	65	17	15	38. 4	5. 23
Williams' College	Berkshire	Prof. A. Hopkins	10	64	17	12	37. 0	4. 17
Richmond	....do	Wm. Bacon	9	68	16	14	37. 1	......
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	29	60	24	20	39. 3	5. 47
Columbia	Tolland	Wm. H. Yeomans	30	72	17, 24	20	41. 9	......
Middletown	Middlesex	Prof. John Johnston	30	68	17	18	41. 3	4. 13
Colebrook	Litchfield	Charlotte Rockwell	9	61	15, 17	12	37. 3	......
NEW YORK.								
Moriches	Suffolk	Mr. & Miss N. Smith	30	72	15, 24	23	46. 0	6. 46
South Hartford	Washington	G. M. Ingalsbe	9	68	15, 17	10	39. 4	5. 10
Fishkill	Dutchess	Wm. H. Denning	9, 10	63	24	22	41. 7	3. 76
Garrison's	Putnam	Thos. B. Arden	10	65	24	20	39. 8	4. 41
White Plains	West Chester	Oliver R. Willis	30	67	24	20	42. 2	......

Table showing the range of the thermometer, &c., for November—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
NEW YORK—Cont'd.								
				°		°	°	*In.*
Throg's Neck	West Chester	F. M. Rogers	30	68	24	24	44.6	3.88
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	30	70	24	26	46.9	5.16
St. Xavier's College.	....do	Rev. John M. Aubier	30	68	24	25	44.7	4.51
Flatbush	King's	Eli T. Mack	30	66	15	23	43.9	4.82
Newbury	Orange	Jas. H. Gardiner	10	67	16, 24	28	42.0	......
Schenectady	Schenectady	Harmon V. Swart	9	64	15, 17	18	37.2	......
Gouverneur	St. Lawrence	Cyrus H. Russell	9	63	24	2	33.8	5.78
South Trenton	Oneida	Storrs Barrows	....	......	....	......	....	2.13
Theresa	Jefferson	S. O. Gregory	9	64	24	13	35.2	5.42
Oswego	Oswego	Wm. S. Malcolm	9	66	24	20	38.2	4.44
Palermo	....do	E. B. Bartlett	9	66	24	14	35.7	5.90
Skaneateles	Onondaga	W. M. Beauchamp	9	64	24	20	36.5	......
Baldwinsville	....do	John Bowman	9	64	24	20	36.6	......
Auburn	Cayuga	John B. Dill	9	70	24	20	39.5	......
Nichols	Tioga	Robert Howell	9	66	24	16	39.0	......
Palmyra	Wayne	Stephen Hyde	9	67	23, 24	27	41.5	......
Geneva	Ontario	Rev. W. D. Wilson	9	65	24	22	38.8	2.44
Rochester	Monroe	Prof. C. Dewey	9	68	23	20	38.5	2.66
Wilson	Niagara	E. S. Holmes, D. D. S	9	67	16	23	39.0	......
Buffalo	Erie	Wm. Ives	9	66	16	21	38.5	3.48
Jamestown	Chautauqua	Rev. S. W. Roe, M. D	9	65	23	12	37.4	3.80
NEW JERSEY.								
Newark	Essex	W. A. Whitehead	30	67	24	21	42.2	3.95
New Brunswick	Middlesex	G. W. Thompson	9	68	24	23	....	......
Burlington	Burlington	Jno. C. Deacon	9	67	24	18	42.8	4.00
Progress	....do	Thos. J. Beans	9	68	24	18	42.5	4.06
Mount Holly	....do	M. J. Rhees, M. D.	9	70	24	21	44.4	......
Haddonfield	Camden	Jas. S. Lippincott	9	71	24	19	43.6	3.53
Greenwich	Cumberland	R. C. Sheppard	9	61	24	17	39.8	3.10
PENNSYLVANIA.								
Fallsington	Bucks	Ebenezer Hance	9, 30	68	24	22	43.5	3.20
Philadelphia	Philadelphia	Pf. J. A. Kirkpatrick	30	69	24	25	45.0	4.07
Germantown	....do	Thos. Meehan	10	70	23, 25	22	....	......
Moorland	Montgomery	Anna Spencer	9	66	24	20	42.5	4.97
Nazareth	Northampton	L. E. Kicksecker	9	65	24	22	40.3	......
North Whitehall	Lehigh	Edward Kohler	30	67	24	19	41.7	......
West Chester	Chester	Pfs. Clark & Aldrich	30	69	23	21	45.3	......
Mount Joy	Lancaster	J. R. Hoffer	9	70	24	23	46.1	2.35
Silver Spring	....do	H. G. Bruckhart	9	68	24, 25	21	42.0	......
Berwick	Columbia	John Eggert	9	68	24	19	42.1	2.04
Harrisburg	Dauphin	John Heisely, M. D.	9	68	24	26	43.8	2.51
Tioga	Tioga	E. T. Bentley	9	71	24	16	40.0	2.05
Fleming	Center	Samuel Brugger	9	69	23, 24	20	38.6	2.69
Pennsville	Clearfield	Elisha Fenton	9	65	23	9	36.2	3.96
Blairsville	Indiana	W. R. Boyers	9	76	23, 25	15	42.0	6.13
Connellsville	Fayette	John Taylor	9	78	23	14	41.9	......
Canonsburg	Washington	Rev. Wm. Smith, D. D.	9	70	23	11	39.8	3.9
DELAWARE.								
Wilmington	New Castle	U. D. Hedges, M. D.	9, 30	68	24	20	43.9	4.80

Table showing the range of the thermometer for November, &c.—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
DIST. OF COLUMBIA.								
				°		°	°	*In.*
Washington	Washington	Smithsonian Inst'n	30	69	24, 25	25	44.7	3.51
MARYLAND.								
Annapolis	Anne Arundel	Wm. R. Goodman	30	68	24	22	45.8	3.66
St. Mary's	St. Mary's	Rev. J. Stephenson	30	72	24	21	48.8	2.30
Sykesville	Carroll	Miss H. M. Baer	29	69	25	15	42.1	3.50
Ellicott's Mills	Howard	Philip Tabb	9	68	23	18	42.2	......
SOUTH CAROLINA.								
Hilton Head	Beaufort	Capt. Chas. R. Suter	9	75	24	28	58.2	2.76
Beaufort	do	M. M. Marsh, M. D.	18	80	23	24	57.1	3.24
MISSISSIPPI.								
Natchez	Adams	Robert McCary	8	80	23	20	56.2	9.77
KENTUCKY.								
Louisville	Jefferson	Mrs. L. Young	29	72	23	12	45.1	6.30
OHIO.								
Austinburg	Ashtabula	E. D. Winchester	9, 29	66	23	12	38.9	3.55
Saybrook	do	James B. Fraser	29	68	23	16	40.1	3.15
New Lisbon	Columbiana	J. F. Benner	9	72	23	14	42.6	1.63
East Fairfield	do	S. B. McMillan	9	68	23	17	39.4	3.23
Steubenville	Jefferson	R. Marsh	......	71	......	18	......	3.65
Welshfield	Geauga	B. F. Abell, A. M.	9	66	23	15	39.1	4.41
Milnersville	Guernsey	Rev. D. Thompson	9	74	22	14	42.3	2.30
Cleveland	Cayuhoga	Mr. and Mrs. G. Hyde	9	71	23	18	42.6	3.51
Cayuhoga Falls	Summit	D. M. Rankin	9	72	23	16	......	3.63
Smithville	Wayne	J. H. Myers	9	70	23	14	41.3	......
Wooster	do	Martin Winger	29	71	23	12	40.5	......
Gallipolis	Gallia	A. P. Rogers	9	74	23	14	44.1	3.60
Kelley's Island	Erie	Geo. C. Huntington	9	65	23	18	41.0	4.43
Norwalk	Huron	Rev. A. Newton	29	68	23	14	40.4	2.98
Westerville	Franklin	Pf. H. A. Thompson	9	70	23	12	42.9	2.55
Kingston	Ross	Prof. John Haywood	9	75	23	14	42.2	2.92
Portsmouth	Scioto	L. Engelbrecht	9	76	23	19	45.2	4.60
Urbana	Champaign	Pf. M. G. Williams	9, 29	68	23	10	41.1	3.53
Hillsborough	Highland	J. McD. Mathews	9	70	23	11	44.3	3.78
Ripley	Brown	Dr. G. Bambach	9, 29	71	23	16	45.6	5.17
Bethel	Clermont	George W. Crane	9	71	22, 23	10	36.2	3.56
Eaton	Preble	Miss Ollitippa Larsh	29	68	23	9	40.6	2.15
Cincinnati	Hamilton	R. C. Phillips	29	72	23	12	47.0	3.36
Do	do	G. W. Harper	29	71	23	13	43.6	3.40
College Hill	do	Isaiah H. Wilson	9	70	23	12	45.3	3.80
Do	do	John W. Hammitt	9	70	23	10	42.9	......
MICHIGAN.								
Pontiac	Oakland	James A. Weeks	29	65	22	20	36.9	......
Monroe	Monroe	Miss F. E. Whelpley	29	67	23	15	38.7	2.55
State Agr'l College	Ingham	Prof. R. C. Kedzie	29	65	22	17	37.9	4.12
Garlick	Ontonagon	Edwin Ellis	28	52	22, 23	8	29.9	......

Table showing the range of the thermometer for November, &c.—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
INDIANA.								
				°		°	°	*In.*
Spiceland	Henry	Wm. Dawson	29	70	23	8	40.4	6.00
New Castle,	....do	Thos. B. Redding	29	69	23	7	38.5	4.32
South Bend	St. Joseph	R. Burroughs	29	68	23	0	37.6	6.34
Indianapolis	Marion	W. W. Butterfield	29	72	23	12	41.2	......
Do	....do	Royal Mayhew	29	72	23	11	41.5	4.34
Rensselaer	Jasper	Dr. J. H. Loughridge	29	68	23	10	37.3	9.05
New Harmony	Posey	Jno. Chappellsmith	29	72	22	18	45.3	3.83
Vevay	Switzerland	Chas G. Boerner	29	72	23	18	45.8	......
ILLINOIS.								
Chicago	Cook	Samuel Brookes	29	66	23	7	32.7	......
Riley	McHenry	E. Babcock	29	63	22	7	34.3	3.75
Ottawa	La Salle	Mrs. E. H. Merwin	29	70	22	3	36.3	3.29
Winnebago	Winnebago	James W. Tolman	29	62	22	6	33.6	2.27
Wyanet	Bureau	E. S. and Miss Phelps	29	70	21	5	38.4	2.78
Tiskilwa	....do	Verry Aldrich	28	64	22	10	38.2	......
Elmira	Stark	O. A. Blanchard	29	71	22	6	37.5	2.36
Hennepin	Putnam	Smiley Shepherd	29	70	....	22	37.1	......
Peoria	Peoria	Frederick Brendel	29	74	22	11	40.1	3.82
Pekin	Tazewell	J. H. Riblett	29	71	22	12	39.1	4.34
Hoyleton	Washington	J. Ellsworth	8, 29	74	22	10	42.7	......
Waverley	Morgan	Timothy Dudley	29	73	22	11	40.2	6.40
Highland	Madison	Ad. F. Bandelier	....	......	....	......	....	......
Galesburg	Knox	Pf. Wm. Livingston	19	67	22	7	34,4	2.90
Manchester	Scott	Dr. J. & Miss Grant	29	73	22	8	40.1	3.67
Augusta	Hancock	S. B. Mead, M. D	29	70	22	6	38.1	3.88
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lups	28	59	23	3	35.6	2.77
Milwaukee	Milwaukee	I. A. Lapham, LL. D	20	60	23	3	32.1	2.61
Do	....do	Carl Winkler	29	61	23	5	35.9	3.27
Green Bay	Brown	Friedrich Deckner	28	52	23	− 3	32.4	3.47
Geneva	Walworth	Wm. H. Whiting	29	58	22, 23	10	34.2	......
Delavan	....do	Leveus Eddy	29	58	22	6	33.3	1.74
Waupacca	Waupacca	H. C. Mead	29, 30	50	23	1	32.4	......
Embarrass	....do	Edward E. Breed	29	49	23	− 2	30.0	4.16
Beloit	Rock	Henry D. Porter	29	60	22	5	33.4	4.00
Baraboo	Sauk	M. C. Wait	27	68	22	4	34.2	......
New Holstein	Calumet	J. Hachez	28	62	23	− 1	32.3	2.30
MINNESOTA.								
Beaver Bay	Lake	C. Wieland	27	47	22	0	30.9	0.92
Ripley	....	Samuel Wilder	3	50	22	−10	26.9	0.60
New Ulm	Brown	Charles Roos	28	57	22	− 5	32.1	1.56
Minneapolis	Hennepin	Wm. Cheney	28	53	22	− 2	29.9	......
IOWA.								
Lyons	Clinton	P. J. Farnsworth, M. D	28	62	22	8	35.6	2.80
Muscatine	Muscatine	J. P. Walton	28	64	22	5	34,7	2.54
Dubuque	Dubuque	Asa Horr, M. D	29	57	22	4	34.1	2.37

Table showing the range of the thermometer for November, &c.—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
IOWA—Continued.								
				°		°	°	*In.*
Guttenburg	Clayton	Philip Dorweiler	27, 28, 29	52	22	4	31.7	3.70
Monticello	Jones	Chauncey Mead	29	56	22	0	28.4	2.57
Independence	Buchanan	D. S. Deering	29	58	22	— 4	32, 5	......
Do	do	A. C. Wheaton	30	57	22	— 1	32.2	3.10
Iowa City	Johnson	T. S. Parvin, A. M.	28	58	22	0	35.8	4.82
Fort Madison	Lee	Daniel McCready	29	67	22	4	37.4	2.28
Waterloo	Black Hawk	T. Steed	29	58	22, 23	—18	33.8	......
Iowa Falls	Hardin	N. Townsend	5	50	21	4	31.0	2.17
Algona	Kossuth	Dr. F. & Miss McCoy	5, 28	54	22	— 6	29.6	......
MISSOURI.								
St. Louis	St. Louis	George Engleman	29	76	22	14	44.1	5.25
Allenton	St. Louis	A. Fendler	29	76	22	11	42.6	3.90
Canton	Lewis	George P. Ray	28	70	22	6	38.0	3.28
Harrisonville	Cass	John Christian	27	64	22	4	38.4	3.81
Easton	Buchanan	P. B. Sibley	27	62	22	2	36.0	......
KANSAS.								
Olatha	Johnson	W. Beckwith	27	64	22	6	....	5.00
Lawrence	Douglas	A. N. Fuller	27	64	22	1	37.0	......
Agricultural College	Riley	H. L. Denison	5, 29	58	22	10	36.6	1.61
Fort Riley	Davis	James H. Pine	25	70	22	10	39.8	1.40
NEBRASKA TER.								
Elkhorn	Washington	Miss A. M. J. Bowen	5	56	22	1	33.1	......
Bellevue	Sarpy	Rev. Wm. Hamilton	5, 6	56	22	3	34.3	1.45
MONTANA TER.								
Fort Laramie	....	Lt. Col. Wm. Collins	12	69	8	1	36.9	......
UTAH TERRITORY.								
Great Salt Lake City.	Great Salt Lake	W. W. Phelps	11	68	8, 17, 21, 23	25	40.2	1.19

NOVEMBER, 1864.

Table showing the average temperature and fall of rain (in inches and tenths) for the month of November, for each of the years named, and for the five years first named collectively, with the average number of places in each State in which the observations were made.

States and Territories.	Av'age No. of places.	Averages, 1855.		Averages, 1856.		Averages, 1857.		Averages, 1858.		Averages, 1859.		Av'rages for 5 yrs.		Averages, 1863.		Averages, 1864.	
		Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.
Maine	6	37.1	4.9	35.1	3.1	37.1	3.3	30.7	2.1	35.5	4.7	35.1	3.6	39.4	6.4	36.2	5.80
New Hampshire	4	36.4	3.7	34.5	2.6	37.5	2.0	28.1	3.0	36.4	3.1	34.6	2.9	35.9	2.5	35.2	3.78
Vermont	5	34.6	1.3	33.2	2.3	35.7	2.2	30.2	2.9	35.8	3.2	33.9	2.4	38.1	2.5	31.9	3.32
Massachusetts	12	39.5	4.3	38.5	3.0	40.6	2.1	35.3	2.6	41.3	2.9	39.1	3.0	42.8	5.2	39.4	4.75
Rhode Island	1	42.0	3.8	39.4	2.0	42.3	2.4	37.2	2.4	43.3	2.3	40.9	2.6	43.3	7.5	....	......
Connecticut	5	42.6	3.3	40.7	3.5	40.7	3.0	35.5	3.2	41.7	2.6	40.3	3.1	43.1	5.3	40.0	4.80
New York	18	39.8	2.0	38.9	2.4	38.2	3.2	36.0	4.2	41.4	2.9	38.9	2.9	42.0	3.6	39.9	4.36
New Jersey	4	44.7	2.7	42.3	4.0	42.3	1.4	38.7	4.3	45.3	3.7	42.7	3.2	44.1	2.7	42.6	3.73
Pennsylvania	20	44.3	3.0	40.5	2.5	39.7	1.9	38.4	4.3	43.2	2.5	41.2	2.3	43.6	3.6	41.9	3.45
Delaware	1	44.5	....	44.7	....	47.0	2.4	44.4	5.1	....	3.5	45.2	3.7	....	....	43.9	4.80
Maryland	5	46.5	1.5	43.9	2.3	42.9	1.5	40.3	3.8	45.7	1.7	43.8	2.1	46.6	2.7	44.8	3.15
District of Columbia	1	48.3	1.1	44.0	2.2	42.3	1.3	41.5	4.2	48.1	1.9	44.8	2.1	47.0	1.7	....	......
South Carolina	6	59.9	1.4	57.2	3.3	64.8	2.5	49.3	2.8	59.6	2.6	58.1	2.5	....	....	57.7	3.00
Tennessee	1	52.6	4.7	44.3	6.0	45.6	5.7	41.6	2.9	51.7	4.7	47.2	4.8	....	....	....	......
Kentucky	1	51.4	3.6	43.5	4.1	42.2	2.8	39.9	2.6	48.8	3.0	45.1	3.2	45.7	3.1	45.1	6.30
Ohio	21	45.4	5.2	40.1	3.0	36.1	5.7	36.9	3.9	44.0	4.5	40.5	4.5	42.4	3.2	42.1	3.53
Michigan	8	39.8	5.2	34.5	3.1	31.7	2.9	35.4	3.7	38.3	3.8	35.9	3.8	38.3	1.9	35.9	3.34
Indiana	5	46.2	3.7	40.9	3.0	38.9	5.8	38.8	3.2	45.7	4.2	42.1	4.0	41.3	3.6	41.0	5.65
Illinois	14	41.8	2.8	35.0	3.6	33.0	2.7	34.8	3.8	40.8	2.9	37.1	3.2	38.7	1.4	37.5	3.59
Wisconsin	10	36.7	2.1	33.7	3.7	29.5	1.6	35.5	2.9	36.4	2.9	38.0	2.7	35.4	4.0	33.3	3.04
Minnesota	3	33.1	1.4	25.3	1.4	25.2	2.6	26.8	1.3	30.0	2.0	28.1	1.7	30.5	0.3	30.0	1.03
Iowa	8	36.1	3.1	33.5	3.5	30.7	3.5	31.3	3.7	38.7	2.0	34.0	5.2	34.8	2.9	33.1	2.97
Missouri	3	47.1	5.2	46.2	4.6	39.1	5.2	37.6	4.9	46.8	5.4	43.4	5.1	40.1	1.3	39.8	4.06
Nebraska Territory	3	....	....	....	....	32.1	1.8	31.0	0.6	37.3	1.2	33.4	1.2	39.3	2.0	33.7	1.45
Kansas	3	....	....	....	....	35.5	3.6	34.3	2.2	45.0	0.7	38.3	2.2	40.6	1.9	37.8	2.67
California	3	....	0.0	5.2	0.7	54.8	2.3	55.5	0.4	53.5	9.0	54.9	2.5	....	....	....	......

There were two periods of decided elevation of temperature in November, one on the 9th or 10th, and the other on the last, or next to the last, day of the month; and at some of the stations, especially in Indiana and Illinois, the maximum at the end of the month was higher than had occurred since September. Both these elevations of temperature were sudden, being preceded and followed by low degrees of cold During the rise in the early part of the month the highest temperature was reached at seven o'clock in the morning, at a number of stations, among them, Cornish, Maine; Worcester, Mass.; Fishkill, New York; Springdale, (near Louisville,) Kentucky; Eaton, Ohio; Pontiac, Michigan; Newcastle, New Harmony, Indianapolis, and Vevay, Indiana. At some other stations, as Williamstown, Mass.; Gouverneur and Skaneateles, New York; Harrisburg and Berwick, Pennsylvania; Rensselaer, Indiana, the highest temperature occurred at 9 p. m.

The following table shows the fall of temperature in the twenty-four hours immediately succeeding the warm morning in the early part of the month. The first two columns give the reading of the thermometer at 7 a. m. of one day, the next two columns the thermometer at 7 a. m. of the next day, and the last column the difference of the two preceding, or the fall of temperature in twenty-four hours. Only those stations are given where the fall was twenty degrees or more at 7 a. m., except Hilton Head, South Carolina, which, though less than twenty degrees, is inserted on account of its being the only station in that part of the country from which a register has been received. The fall of fourteen degrees at this place serves to show that the cause which produced the rise and fall of temperature in the western, middle and New England States, operated also on the southern Atlantic coast. West of Indiana, the stations where the fall was twenty degrees or more, were as follows:

Hoylton, Illinois, 34° from 7 a. m. of the 9th to 7 a. m. of the 10th.
Peoria, do. 21° from 2 p. m. of the 8th to 2 p. m of the 9th.
Manchester, do. 24° from 2 p. m. of the 8th to 2 p. m. of the 9th.
Pekin, do. 20° from 2 p. m. of the 8th to 2 p. m. of the 9th.
Waverley, do. 27° from 2 p. m. of the 8th to 2 p. m. of the 9th.
St. Louis, Missouri, 32° from 2 p. m. of the 8th to 2 p. m. of the 9th.
Allentown, do. 40° from 2 p. m. of the 8th to 2 p. m. of the 9th.
Monticello, Iowa, 20° from 2 p. m. of the 7th to 2 p. m. of the 8th.
Spring Grove, do. 20° from 9 p. m. of the 7th to 9 p. m. of the 8th.
Bellevue, Nebraska, 22° from 2 p. m. of the 6th to 2 p. m. of the 7th.

Table showing the fall of temperature in the twenty-four hours immediately succeeding the warm morning in the early part of the month.

Station.	7 a. m.		7 a. m.		Fall of temperature in 24 hours.
	Day.	Temperature.	Day.	Temperature.	
Cornishville, Maine	10	60	11	36	24
Lisbon, Maine	10	55	11	35	20
Lee, Maine	10	58	11	38	20
Gardiner, Maine	10	57	11	37	20
Cornish, Maine	10	58	11	34	24
Stratford, New Hampshire	10	60	11	38	22
Claremont, New Hampshire	10	62	11	42	20
Craftsbury, Vermont	10	58	11	34	24
Newbury, Massachusetts	10	63	11	35	28
Sandwich, Massachusetts	10	63	11	42	21
Topsfield, Massachusetts	10	64	11	44	20
Williamstown, Massachusetts	10	64	11	37	27
Westfield, Massachusetts	10	62	11	37	25
Amherst, Massachusetts	10	60	11	37	23
Mendon, Massachusetts	10	61	11	37	24
Worcester, Massachusetts	10	63	11	38	25
Baldwinsville, Massachusetts	10	58	11	32	26
Pomfret, Connecticut	10	59	11	35	24
Columbia, Connecticut	10	62	11	38	24
Middletown, Connecticut	10	62	11	37	25
Moriches, New York	10	63	11	43	20
Nichols, New York	10	56	11	34	22
South Hartford, New York	10	67	11	41	26
Jamestown, New York	10	63	11	43	20
Schenectady, New York	10	64	11	38	26
Baldwinsville, New York	10	55	11	35	20
Newburg, New York	10	67	11	44	23
Fishkill, New York	10	65	11	39	24
Skaneateles, New York	10	54	11	32	22
Geneva, New York	10	58	11	37	21
Auburn, (St. F. Xavier's College,) New York	10	64	11	38	26
Greenwich, New Jersey	10	58	11	36	22
Mount Holly, New Jersey	10	66	11	42	24
Haddonfield, New Jersey	10	66	11	39	27
New Brunswick, New Jersey	10	66	11	38	28
Burlington, New Jersey	10	64	11	38	26
Progress, New Jersey	10	65	11	39	26
Philadelphia, Pennsylvania	10	65	11	43	22
Fallsington, Pennsylvania	10	64	11	40	24
Horsham, Pennsylvania	10	64	11	37	27
Harrisburg, Pennsylvania	10	66	11	46	20
Nazareth, Pennsylvania	10	65	11	36	29
Silver Spring, Pennsylvania	10	66	11	40	26
North Whitehall, Pennsylvania	10	66	11	38	28
Wilmington, Delaware	10	65	11	39	26
Oakland, Maryland	10	66	11	40	26
St. Mary's City, Maryland	10	64	11	43	21
Sykesville, Maryland	10	65	11	38	27
Annapolis, Maryland	10	66	11	37	29
Hilton Head, South Carolina	10	68	11	54	14
Natchez, Mississippi	9	75	10	38	37
Springdale, Kentucky	9	70	10	40	30
Kingston, Ohio	9	65	10	38	27

Table—Continued.

Station.	7 a. m.		7 a. m.		Fall of temperature in 24 hours.
	Day.	Temperature.	Day.	Temperature.	
Portsmouth, Ohio	9	64	10	44	20
Urbana, Ohio	9	67	10	39	28
Austinburg, Ohio	9	61	10	40	21
New Lisbon, Ohio	9	62	10	40	22
Westerville, Ohio	9	64	10	37	27
College Hill, Ohio	9	65	10	41	24
Ripley, Ohio	9	65	10	41	24
Cleveland, Ohio	9	66	10	41	25
Cincinnati, (Phillips,) Ohio	9	68	10	44	24
Cincinnati, (Harper,) Ohio	9	67	10	39	28
Hillsboro', Ohio	9	65	10	37	28
Eaton, Ohio	9	66	10	36	30
Bethel, Ohio	9	66	10	39	27
Saybrook, Ohio	9	64	10	40	24
Welshfield, Ohio	9	64	10	38	26
Smithville, Ohio	9	66	10	40	26
Cuyahoga Falls, Ohio	9	66	10	38	28
Wooster, Ohio	9	68	10	44	24
Norwalk, Ohio	9	62	10	37	25
Milnersville, Ohio	9	61	10	36	25
Pontiac, Michigan	9	62	10	33	29
Lansing, Michigan	9	60	10	34	26
Newcastle, Indiana	9	66	10	35	31
New Harmony, Indiana	9	72	10	36	36
Spiceland, Indiana	9	66	10	33	33
South Bend, Indiana	9	55	10	30	25
Indianapolis, (Mayhew,) Indiana	9	67	10	34	33
Indianapolis, (Butterfield,) Indiana	9	69	10	32	37
Vevay, Indiana	9	68	10	42	26
Rensselaer, Indiana	9	50	10	28	22

TORNADO AT CHESTER, ILLINOIS.

Below are given a few notes of the weather from Nebraska to Ohio, at the time represented in the preceding table. Further east, all the way to Maine, there was rain, with intermissions from the 7th or 8th to the 10th of the month. At Steuben, Maine, there was a thunder shower on the night of the 9th. The meteorological correspondent of the Boston Traveller, under date of November 5, says: "The low maximum of the thermometer during the last four weeks has been unprecedented here within forty years; it was so low that the temperature of 60° yesterday afternoon was the warmest since October 11, when it was 60½°." On the 9th November the thermometer rose to 67°, which was the highest since the 7th of October. It will be observed that in the region of the Mississippi river a severe storm prevailed, which was very destructive at Chester and Randolph, Illinois, on the Mississippi river, about eighty miles below St. Louis, Missouri.

Bellevue, Nebraska.—Snow from 4 p. m. of the 7th to 2 p. m. of the 9th, twelve inches.

Richland, Nebraska.—Snow from 3 p. m. of the 7th to noon of the 9th, four inches.

Lawrence, Kansas.—November 8.—A rain, accompanied by sleet, falling nearly all day. The rain freezes almost as soon as it touches the ground.

Harrisonville, Missouri.—November 9.—Commenced snowing or sleeting about 7 a. m., and much timber has been broken down by it.

Allentown, Missouri.—November 8.—Thunder and lightning from 3½ to 4 p. m.

St Louis, Missouri.—November 8.—Two thunder storms; the most violent was from midnight of the 8th to 2 a. m. on the 9th.

Guttenberg, Iowa.—On the 6th, 7th, and 8th cold rains fell which formed a crust on trees and fences. On the 9th, at noon, the rain changed to snow, and fell to the depth of about four inches, but the wind carried it away from exposed places, and piled it up behind fences and ravines to about two or three feet deep.

Algona, Iowa.—November 9.—A snow storm from the NW. this forenoon, quite violent.

Waterloo, Iowa.—November 8.—Snow, rain, and freezing, storm from NW. 10th, snowed a little; trees all bent or broken to the ground.

Monticello, Iowa.—The snow of the 9th and 10th caught a large amount of corn in the fields in this part of this state. 15th.—The snow of the 9th and 10th still continues with us, preventing the harvesting of corn up to this date.

Iowa Falls, Iowa.—November 9.—Heavy snow storm. It is not quite so cold as last winter, but the snow is flying so thick as to prevent seeing more than a few rods. The wind blows a strong gale, and is piling the snow in heavy and large drifts.

Iowa City, Iowa.—November 9.—At 11 a. m., after a rain of two days, the barometer fell, and snow, with violent wind, set in from the NW. During the storm the wind veered so as to "box the compass," from the E., SE., S., SW., W., to NW.

Beaver Bay, Minnesota.—November 9.—North wind blew a hurricane at 10 p. m.

Manitowoc, Wisconsin.—November 9.—At 4 p. m. the wind blew with a force of six from NE., and, five minutes later, blew with the same velocity from the SW.; barometer very low.

Beloit, Wisconsin.—November 9.—The lowest observation of the barometer ever made at this station was this afternoon. The wind changed with great rapidity from NE. to S., and then as quickly to NW. Between 12 and 6 p. m. the winds were exceedingly high.

Delavan, Wisconsin.—November 9.—The fall of the barometer was mostly from 11 a. m. to 1 p. m. The wind changed from NE. at 1.15 p. m. and blew a strong gale, first from the S. and afterwards from the W.

Riley, Illinois.—November 9.—Rain all night and this forenoon. At 12 m. the wind changed from NE. to SE. The mercury rose six degrees in half an hour, then fell sixteen degrees in the next hour and a half, during which time the wind went around to the SW., blowing a gale all the time, prostrating fences and blowing the tops from stacks badly. About 4½ p. m. snow fell for half an hour—the first of the season.

Hoylton, Illinois.—November 9.—It commenced raining last night at 6 p. m., and there was a perfect gale through the night, with an abundance of rain and several thunder storms, mostly from the south; one came from the west. At 3 a. m. of the 9th a tornado passed through one mile south of this place, doing considerable damage. The starting point, as near as I can learn, was at or near the town of Chester, on the Mississippi. It destroyed one half of the town and killed twenty or more of the inhabitants. It took a northeast direction, passing a mile south of us. It had been raining for several hours, with a strong south wind. A few minutes before three in the night the wind shifted almost instantly into the west, blowing hard, though quite steady, with torrents of rain, and very dark. It lasted about ten minutes, when it shifted again into the south, (this was one mile from the track of the tornado.) We had had two or three thunder-showers in the fore part of the night, and it continued to rain till morning, when we began to hear of the destruction it had made. We had no rain for some time before, except a light shower the day before. The tornado struck the end of a house through the middle. It then took up a granary, with one hundred bushels of wheat and one hundred and fifty bushels of oats, without spilling it, carried it several rods, and then scattered it to the four winds. It next came to a poor widow's house, which it took from the ground and whirled it to atoms, carrying some of the timbers forty rods or more. About a mile from the widow's it tore up an orchard by the roots, and struck another house, which it appeared to smash to atoms on its foundation, as though a great weight had fallen upon it. Some light things were carried a distance of four or five miles, in a NE. direction, where it hit the agricultural college and moved it several feet. From here we heard but little from it, until it reached Indiana. The width of the track was about five rods.—*J. Ellsworth.*

Chester, Illinois.—A terrible tornado passed over the town of Chester about 2 o'clock on the morning of the 9th November, resulting in great loss of life and property. Some twelve or fourteen houses were blown down and completely demolished, burying the sleeping inmates in the ruins. The storm seems to have come from the southwest, and passed only over the southern portion of the town.—*Newspaper.*

Sparta, Randolph County, Illinois.—The 8th of November, election day, was very warm. Thermometer, at sunrise, 62 degrees, rising to near 80 degrees. Towards sunset heavy, lowering clouds, in masses gathered, and at 1 o'clock a. m. of the 9th one of the most dreadful tornadoes that ever visited this section of country swept over the county from southwest to northeast, levelling everything that came in its way, trees, barns, houses, churches, killing and wounding a considerable number of persons. It first, in this county, struck the steam ferry-boat on the Mississippi river, at Chester, blowing all but the hull, boilers and engine right up the bluff; then over the county, in the direction named, about a third to half a mile in width, destroying and levelling everything in its course. By the time it reached the central railroad its force seemed to be spent.—*William Addison.*

Winnebago, Illinois.—November 9.—At 4½ p. m. the barometer, corrected, stood at 28.090, the lowest observation on record at this point, being two-tenths of an inch lower than on the 28th December, 1863, and nearly an inch lower than its normal height at this point.

Waverly, Illinois.—November 8.—A thunder storm set in at 5 p. m., and continued with slight intermission through the night. There was not much thunder, lightning, or wind, but an unusual amount of rain fell, measuring full four inches.

Tiskilwa, Illinois.—November 8.—Thunder and lightning between 6 and 7 o'clock this evening in the south and southeast; lightning diffuse.

Ottawa, Illinois.—November 8.—Rain, accompanied by diffuse lightning and distant thunder.

Ottawa, Illinois.—November 9.—This day witnessed the severest blow we remember ever having experienced in Ottawa. A storm had been raging from the east until this morning, when the wind veered round to the southeast, and and for four or five hours blew so strongly that a number of chimneys were thrown down and other damage done.—*Newspaper.*

Spiceland, Indiana.—November 8.—Three inches of rain fell to-day. 9th.—Nearly an inch of rain fell between midnight and day, and nearly an inch about noon. Instruments nearly stationary between 2 and 6 p. m. From 6 to 9 p. m. the barometer rose 22-hundredths of an inch, and the thermometer fell 13 degrees.

Indianapolis, Indiana.—November 8.—Rain, with thunder and lightning, northwestward from about midnight till morning, and lightning south and southwest about 7 to 9 p. m. of same day, and rain at night. The rain continued till 12½ p. m. of the 9th, on which day the heaviest rain fell.

Newcastle, Indiana.—November 8.—Rain commenced at 3 p. m. and continued nearly all day; lightning diffuse, faint, distant from 6½ to 9 p. m. 9th.—Rained most of last night; heavy showers; thunder and lightning towards day. From 11 a. m. to 11½ a. m. the barometer fell a tenth of an inch; from noon to 1 p. m. a heavy and severe gale, and rain from southwest.

Kingston, Ohio.—November 9.—A very stormy day. More than half the rain which has fallen during the storm beginning on the 6th, and just ended, fell to-day.

Portsmouth, Ohio.—November 9.—Violent winds this p. m.; some damage to shipping.

Westerville, Ohio.—November 9.—There has been a high southwest wind all day, accompanied with rain.

Welshfield, Ohio.—High winds through the nights of the 9th and 10th, followed by snow on the 11th.

Natchez, Mississippi.—November 8.—Morning overcast; 12.30 rain; overcast all the evening; wind very strong from the south all day. 9th.—Morning overcast and rainy: wind suddenly changed from the south to the southwest; very high from that point; noon overcast and wind light.

SNOW STORMS.

An extensive snow storm prevailed about the middle of the month. At Cornish, Maine, 8 inches fell; at Lunenburg, Vt., 5 inches; Williamstown, Mass., 16 inches; Colebrook, Conn., 6 inches; Palermo, N. Y., 6 inches; Newark, N. J., ¼ inch; Fleming, Penn., 1 inch; Cleveland, Ohio, 2 inches; Lansing, Mich., 3½ inches; Rensselaer, Ind., 2¼ inches; Riley, Ill., 4 inches; Waupacca, Wis., 6 inches; Minneapolis, Minn., 4½; Dubuque, Iowa, 1 inch. The stations given are those where the largest amounts are recorded in each State. At many stations, especially at the west, very little snow fell, and at some only rain, and at some neither snow nor rain. Later in the month another general fall of snow and rain is recorded, but less than during the preceding storm. From an official report of Col. Chirington, commanding district of Colorado, published in the newspapers, heavy snows seem to have fallen in that region. Under date of November 29, in Cheyenne county, South Bend, Big Sandy, he says: "In the last ten days my command has marched three hundred miles—one hundred of which the snow was two feet deep."

Albuquerque, New Mexico.—November 8.—No mail was received from the States last week, doubtless owing to the obstruction of the road by snow, which is reported to be from a foot and a half to two feet deep east of Santa Fé mountains.—*New Mexico Press, Albuquerque, November* 8, 1864.

Albuquerque, New Mexico.—November 15.—Yesterday morning people hereabout woke up to find the streets very slippery with mud, and the rain falling steadily, though not in torrents, as usual on such occasions. Last Tuesday afternoon, (November 8,) snow flakes fell pretty lively for about twenty minutes, and would have made good sleighing had it not been for contrary causes. However good snow may be in its place, the Sandia mountains have had too much of it for speedy travel. Mr. Subert says the snow was so deep that his wagons were four days coming from Chilili to this place. Further to the northeast the fall of snow must have been very heavy. The travel on the road above and below this place is difficult on account of the mud.—*New Mexico Press, November* 15, 1864.

Albuquerque.—November 22.—A mail has gotten through from Kansas City at last. The cause of detention was deep snow.—*New Mexico Press, November* 22, 1864.

METEORS.

Circulars, together with a map of the stars prepared by a committee of the Connecticut academy of arts and sciences, were distributed among the observers for the purpose of obtaining a full record of such meteors as might be observed on the night of the 13th of November, the period of their anticipated annual appearance in large numbers. But the general cloudiness of the night prevented any extensive observations, and when the sky was partially clear nothing unusual was reported.

AURORA.

On the night of the 19th November an aurora was reported by many observers from New England to west of the Mississippi.